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COMMERCIAL CAR JOURNAL
THE MAGAZINE FOR TRUCK AND BUS FLEET OPERATORS

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This truth, forsooth, King Arthur quoth
To his Knights of the rolling road,
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Than it's back for another load."

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"P-I-E has standardized on Dodge for its San Francisco-Oakland fleet"

Why new DODGE *"Job-Rated"* TRUCKS are the BIG CHOICE of BIG FLEETS

HIGH-POWERED FOR THE LONG PULL!

You can count on new Dodge trucks to meet tight schedules! Seven big engines—three of them all-new—from 100 h.p. to 171 h.p. Twin carburetion and exhaust systems in heavier models. With Dodge you're sure of the *right* power for your job. Not too little power—that causes unnecessary strain and wear on the engine. Not too much power—that costs you money in wasted gas and oil. The right power, plus famous Dodge handling ease, saves time and money!

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. . . says **C. E. JOHNSON,** *Executive Vice President, Pacific Intermountain Express, 299 Adeline St., Oakland, Cal.*

"Pacific Intermountain Express now owns and operates a fleet of fifty-four Dodge '*Job-Rated*' trucks in the San Francisco-Oakland Bay area. We have found that the greater horsepower and increased cubic-inch displacement of our new Dodge units are ideal for the hilly terrain of this territory.

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DODGE

"Job-Rated" TRUCKS

COMMERCIAL

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DISTINGUISHED-LOOKING, lightweight route trucks with large bodies, free of corroded and dented panels, reflect the good taste and the success of the business leaders they serve.

Smart in design, weighing only half as much as big steel bodies, Olson Kurb-Side Aluminum Alloy Bodies are revolutionizing the economics of route deliveries. They reduce gasoline and tire costs; lengthen the life of brakes and clutches; are easier on bearings, springs, spindles, king pins; and lessen the strain on the power plant. They save appalling corrosion expense and excessive denting—the side panels, skirts, rub-rails and rear panels are ⅛th-inch thick!

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The dignity and quality of Olson Kurb-Sides are quiet advertisements, "Symbols of Success," in the cities and towns they serve.

Perhaps you have not had an opportunity to learn about the advantages of Olson Kurb-Side Aluminum Alloy Bodies from your local Chevrolet, Ford or GMC dealer. We invite you to ask for information and a copy of the new truck buyers' guide, "The ABC's of Route Truck Selection." Sent without obligation *while the supply lasts.*

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JOURNAL

CCJ READER DIGEST

ICC Safety Regulations—A Reminder

Among the safety regulations due to become effective in the next few months, several have been changed since they were originally announced. For a review of the rules, changes, interpretations and effective dates, see page 64.

John Bull Sells Back His Trucks

From London, a special report on the return of Britain's "for hire" trucking industry to private ownership. With nationalization ended, all truckers find that they must share the cost through higher taxes. See page 67.

Size and Weight Restrictions

Does the public benefit from size and weight restrictions? Merrill Horine does not think so. He says that arbitrary limits on essential and economic highway transportation work a hardship on the public as well as the trucker. He lambasts the Bridge Formula, showing how state laws have resulted in poor load distribution and unstable vehicles. See page 68.

Low Temperature Welding for the Fleet Shop

Here is a comprehensive story on the non-fusion method of joining metals, written by an expert in the field. After reading this you may want to take advantage of this type welding. It is simple, strong and eliminates distortion. See page 78.

U. S. Department of Agriculture Tests Reefers

To help truckers, shippers and equipment manufacturers, the Department of Agriculture has been conducting a series of equipment tests under typical operating conditions. For an analysis of the current series, see page 80.

New Equipment Announcements

Mack's new 672 cu in. diesel develops 170 hp at 2100 rpm, has combustion chamber formed entirely in the piston crown. Page 84 . . . New Devilbiss paint spray booth cuts painting costs by ⅓ according to Cleveland Transit System. For details see page 86 . . . Timken-Detroit Axle Co. has produced a new light-weight tandem-drive unit featuring an interaxle differential and complete freedom from lubrication. Page 94 . . . Designed to meet the needs of a trailer leasing firm, Fruehauf Trailer Co. made a trailer with variable tandem-axle position so it can be adjusted to meet varying state requirements. Page 94 . . . Strick's new line of lightweight, refrigerated semi-trailers features complete plastic lining except for the floor. Page 96.

There's no such thing as normal conditions in the fleet business!

Traffic jam! Start. Stop. Dome lights, stop lights, directional lights—all wearing down the battery. Engine idling, then revving up again. Mighty tough on an ignition system, and especially on the voltage regulator. Yet over some of the roughest city bus runs in the world BLUE STREAK heavy-duty voltage regulators have operated flawlessly hundreds of thousands of miles.

The BLUE STREAK heavy-duty regulator has two contacts on the cutout armature to ease the "current burden," where most conventional regulators have only one. BLUE STREAK resistance wire is wound on a tough, non-warping, non-cracking heat-resistant fibre glass core. The bottom of the BLUE STREAK regulator is covered; protection for you and the regulator. (*A simple enough procedure, but only* BLUE STREAK *does it.*)

Whether you have a real traffic problem or not, you'll find that under any conditions BLUE STREAK heavy duty regulators are the best . . . and longest lasting . . . on the market. Write STANDARD MOTOR PRODUCTS, INC., 37-18 Northern Boulevard, Long Island City 1, New York.

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PIONEER IN HEAVY DUTY IGNITION

ONE MINUTE A WEEK

CAN SAVE A BATTERY FOR YEARS!

Trouble-Spotting Unit Ups Battery Life—Prolongs Life Of All Electrical Units—Cuts Road Delays

IT'S easy to save money—save time—get longer service from every battery in your fleet when you know how. And knowing how is as simple as installing the Goodyear Battery Maintenance Plan.

Here's how it works! When your maintenance man waters batteries, he makes a quick test with the Goodyear All-Purpose Battery Tester and marks his findings on a separate Fleet Battery Maintenance Card for each battery. If his marks fall within the "safety zone" *(the stripe indicated on the card above)*, he knows the voltage regulation is right.

The regular record he keeps will show you when trouble is on the way—*lets you correct it before it happens.* You can spot voltage regulator troubles—too high settings that "burn out" batteries and cut the life of every replacement element in your truck's electrical system, as well as too-low settings that mean discharged batteries, frequent recharges and premature battery failures. Nothing else takes the guesswork out of voltage regulation and battery maintenance!

We know that this plan will give you a substantial saving in operating costs—and by using it in conjunction with Goodyear heavy-duty truck and bus or Diesel type batteries, you'll save even more. Get the complete facts on this sensational plan by sending for a copy of the Goodyear Fleet Maintenance Manual today! It's free—use coupon below.

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The OVERLOAD

EDITORIAL COMMENT

Shortest Road to Better Highways

PAR means many things to many different people. But in all-cap letters and to most highway users it is fast becoming synonymous with Project Adequate Roads.

Reduced to barest essentials PAR provides a means through which highway users can assist highway officials in putting first things first when it comes to building and improving America's roads. Usually this is accomplished by setting up a measure of highway adequacy known as "sufficient ratings" and always it works at local levels. The local aspect is important, for while there is a National PAR Committee, the project must operate at such levels as states, towns, cities and counties. Each community has its own highway problems and they cannot be resolved by a national formula.

Project Adequate Roads was first publicly introduced in the fall of 1951 and first reported in detail to fleet operators in the December, '51, issue of CCJ. Since that time it has been widely publicized to and widely supported by national advertisers, and such other highway user groups as the bus operators and organized passenger car owner groups.

On the surface it would appear that PAR's progress has blown both hot and cold in the month since it was first organized. But this is to be expected, for a movement of such magnitude cannot roll into high gear overnight. Often it takes months of patient planning and work before a single project can bear fruit.

Last month PAR got its best shot in the arm to date at a national report meeting in Washington (See page 62). Before the day was over all in attendance had a detailed picture of what PAR has done and more importantly what PAR *can* do to help get the nation out of its highway muddle. As each man left the room, he had a working packet outlining what HE can do for this important cause.

But that was 150 men. Millions are needed. Some 35,000 are readers of this magazine. What can WE do? The answers take many shapes, just as the PAR movement itself must be fitted to local needs.

A few who read this page are important advertisers. Some have already run extensive promotion on the better roads movement. Others may be considering such a program. We hope that each will consider carefully the value of a *united* campaign; work with PAR officials in an effort to make each company's dollars count the most.

Another handful are truck or bus fleet operators who have already done much to lead in local PAR movements. To them we can only say—keep up the good work.

Others are well aware of highway deficiencies, yet spend most of their time griping instead of working constructively. To them we urge careful consideration of how PAR can help. Work packets are available to all who are really interested. You can check item L1 on the postcard opposite page 90 or you can write specific comments to Arthur C. Butler, PAR secretary, 952 National Press Bldg., Washington 4, D. C.

Still others will be "too busy" to spearhead the drive but they can still help, materially. How? By the simple expediency of throwing their weight behind the PAR project as it is or may soon be organized in their own communities.

Project Adequate Roads is not an altruistic venture limited to civic leaders. A new booklet, "Mud and Muddle or Mobility," points out how Virginia's 17-mile long Shirley Highway leading into Washington saves commercial operators $2 million a year. Others like the Gulf Coast Freeway at Houston or the Pennsylvania Turnpike or the 2-mile by-pass around "Squeedunk" are paying proportionate dividends.

All point out the fact that adequate highways don't cost money. They pay. And all were created because somebody had vision and push. How about you?

Bart Rawson
Editor

WANT TO CUT TRUCK MAINTENANCE COSTS ?

JUST REMEMBER the important part effective lubrication plays in keeping your maintenance costs low. Chassis parts, for example, last far longer when they're lubricated with *Texaco Marfak.*

Texaco Marfak is the world's most famous chassis lubricant – the lubricant that won't pound out on rough roads, won't squeeze out under heavy loads. *Texaco Marfak* seals out dirt and moisture, gives you extra hundreds of miles

TEXACO

TEXACO

At Your Service

TIMELY NOTES ON MAINTENANCE AND OPERATION

by MURRAY SIMKINS Managing Editor

Breaker Arm Wear

STANDARD Motor Products, Inc., suggests that where premature wear of the distributor cam is noticed, the operator should check for traces of metal packed in pockets of the cam, obviously during manufacture.

One ignition manufacturer makes a new two-piece type cam consisting of a carrying post and a thin steel band forced or sweated to the post. It has been found that metallic chips lodged between the band and the shaft sometimes drop down on the lobes causing undue wear of the bumper block.

It is suggested that where such wear is found, the part be cleaned carefully and lubricated by applying a light coat of high temperature grease to the cam. However, when such wear starts, it is advisable to replace with a new shaft.

Home-Made Mudguards

AN inexpensive but effective way of equipping a transport van with mudguards has been used by Central Lumber Co., New Richmond, Wis. Yard carpenters utilized pieces of Masonite 5/16-in. Tempered Presswood, 2 x 3 ft, attaching them behind the wheels to the body understructure. Hinges were installed so that the guards swing slightly with the motion of the truck, but do not touch the wheels.

Diagnosing Engine Noises

EVERY mechanic should be able to diagnose engine knocks and determine reasonably accurately the source of the trouble. Worn main bearings produce a deep toned knock usually more noticeable under engine load. The offending bearing may be located by shorting out the spark plugs one at a time with the engine under a medium load. The noise will be less noticeable when the plugs are shorted out on either side of the defective bearing.

A rapid, sharp metallic rap usually indicates a loose connecting rod bearing. This noise is most noticeable on a float, on an initial light throttle. Shorting out the plugs will show up the bad bearing. When the noise disappears or quiets down as a plug is shorted out, that rod is at fault.

Two different piston slaps may occur. The cold slap will disappear as soon as the engine is warmed up. The "hot slap" may be caused by improper fit of the pistons, piston taper, collapsed skirts, misalignment of the connecting rods or work piston pins.—From Chevrolet Service News.

Rotation Saves Tire Wear

TIRE rotation is advisable because tests and measurements have shown tire wear varies, on the average, in about the following ratios: Left front 14 per cent; right front 19 per cent; left rear 29 per cent; right rear 38 per cent. Rotation pattern—spare to right rear to left front to left rear to right front to spare.—A.A.A.

Danger—Carbon Monoxide

AN insurance company investigation has turned up the surprising conclusion that danger of carbon monoxide poisoning from a faulty exhaust system is greater when the cab windows are open than when they are closed if the vehicle is in motion. The Association of Casualty and Insurance Companies which presented data gathered by California authorities, says that suction created by the vehicle's movement would draw into the cab through the open windows carbon monoxide gas escaping from a leak in the rear section of the exhaust system. It says further that leaks at the rear of the vehicle were principal factors in releasing exhaust gases.

When Analyzing Fuel Pump Tests . . .

KEM Manufacturing Co. makes the following recommendations to mechanics when analyzing the results of fuel and vacuum pump tests:

1. When the fuel pump pressure is normal and the carburetor floods or runs rich, the trouble will be located in the carburetor, and not in the fuel pump.

2. With normal fuel pump pressure and suction, but with Test No. 2 indicating low capacity, the trouble is probably in another part of the fuel system and it will be necessary to perform the following checks.

a. Check the gas tank filler cap and tank vents. If these are plugged, air cannot enter the tank and fuel trouble will occur because insufficient fuel will be delivered to the fuel pump.

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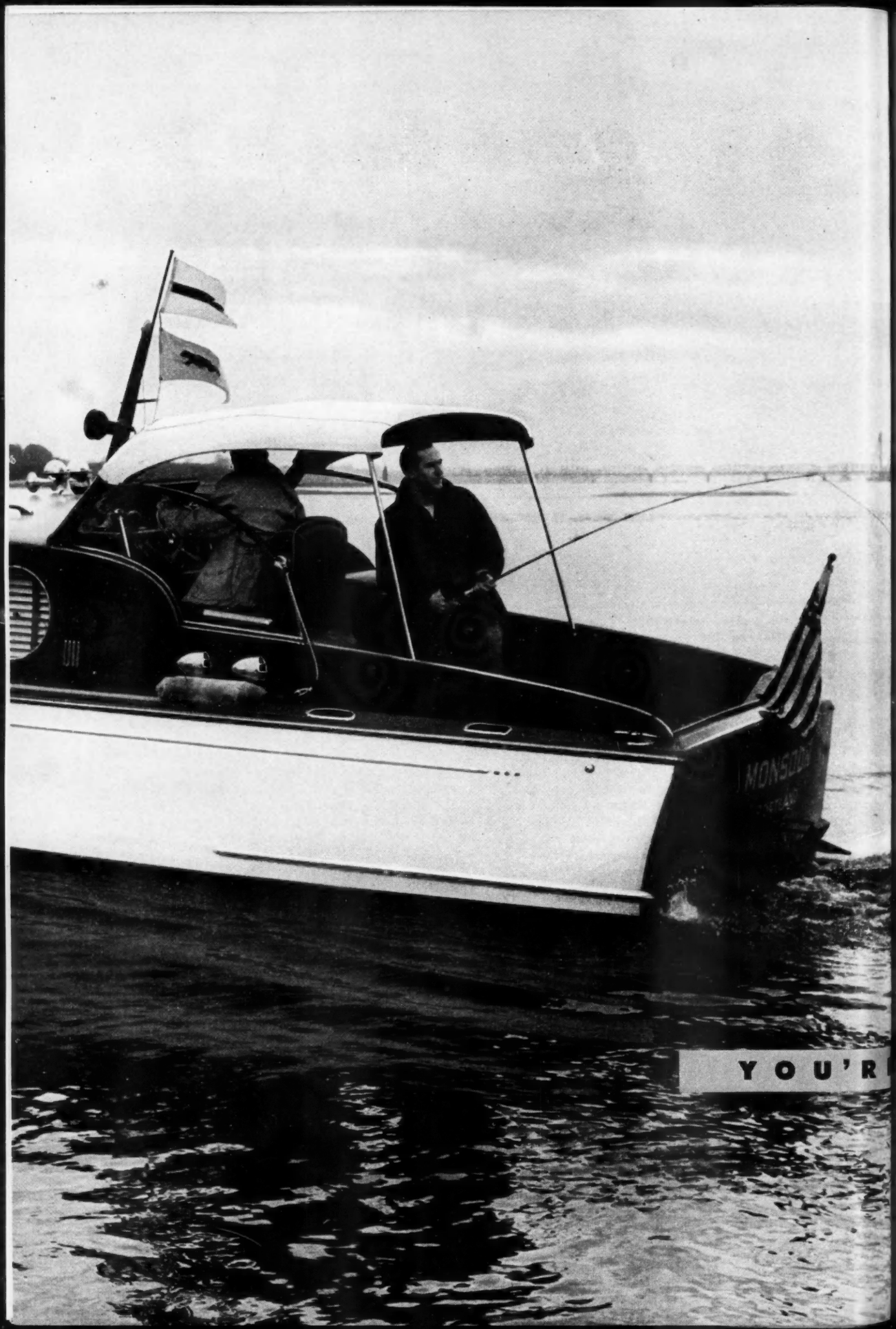
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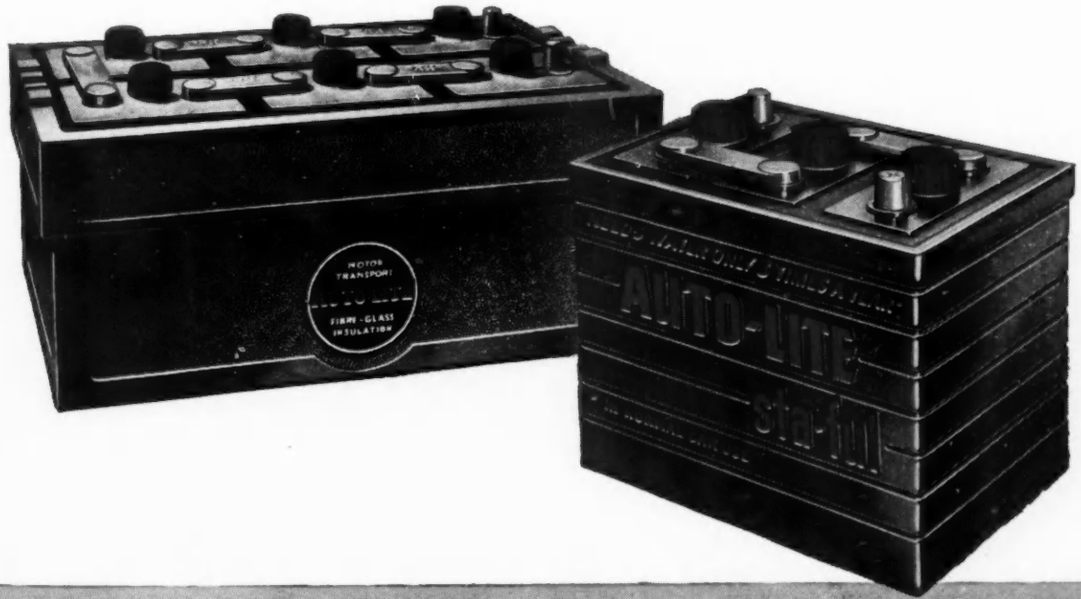
"You've got to use the right equipment"

Joe E Franz

UNITED STATES BAKERIES
PORTLAND, OREGON

"On-time service is a must in the bakery business. That's why we're sold on the dependable, long life service we get from the Auto-Lite 'Sta-ful' Battery. Because the 'Sta-ful' requires less servicing, our trucks are keeping delivery schedules instead of standing in the garage," says Joe E. Franz of United States Bakeries.

"Any company interested in raising profits while lowering maintenance costs should check 'Sta-ful' . . . the battery that needs water only one third as often as ordinary batteries. They'll soon find that feature for feature 'Sta-ful' is their best bet in a fleet battery."



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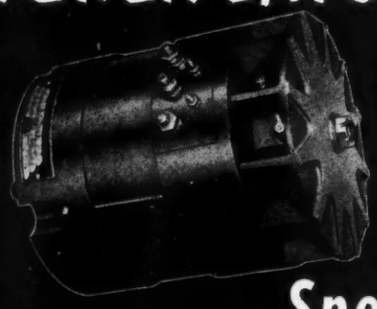

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Leece-Neville
Alternators

Over 7 years of fleet performance has proved the unmatched reliability of L-N Alternators. Many of them have run 500,000 miles and more with only routine maintenance. With 25 to 40 amps at idle and high output at all speeds, L-N Alternators carry the entire electrical load, leaving batteries for starting only. Think what this freedom from electrical breakdown can mean for your fleet! There are 6-volt L-N Alternator Systems of 50 and 95 amps capacities; 50 to 150 amps for 12 volts. Be sure to specify L-N.

Out front over 43 years

Since 1909 Leece-Neville has been in the forefront of invention, development and perfection of automotive electric equipment. The *first* generators and cranking motors used as standard equipment on automobiles were built by Leece-Neville, who also brought out the *first* third-brush generator. Today, with outstanding engineering and production facilities, L-N is the acknowledged leader in design and manufacture of special and heavy-duty electric units. The Leece-Neville Company, Cleveland 14, Ohio.

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SWITCHES • SMALL MOTORS

TRUCK BUS DIESEL OFF-HIGHWAY
PASSENGER RAILROAD MARINE INDUSTRIAL

CCJ At Your Service

Continued from Page 9

b. Check the condition of all flexible fuel lines. When weak, these lines will often collapse under pump suction and restrict the fuel flow. Flexible lines can also become porous and allow air to be drawn into the pump, causing lowered fuel capacity.

c. Check the loose line connections between the fuel pump and tank which would allow air to enter with the fuel and cut down the ability of the pump to deliver enough fuel. Air leakage into the fuel will also cause vapor lock to occur more frequently.

d. Check all fuel lines for restrictions caused by kinks, deposits of dirt, or scale, and other conditions which would reduce the ability of the pump to deliver sufficient fuel. When servicing the fuel system, it is always advisable to blow out or flush all lines in order to render them free of dirt which can cause considerable trouble in both the pump and carburetor when carried through the system.

3. Some vehicles have fuel filters or screens installed at the inlet opening of the fuel line inside the tank. Because these filters are not visible or readily accessible for service, they sometimes become clogged, causing road failures and fuel system trouble which is difficult to locate. In many of these installations, it is necessary to remove the tank in order to clean and service these filters. Occasionally it is possible to clear a tank filter by removing the filler cap and blowing high pressure air back through the line to the tank.

4. Whenever a fuel line is disconnected or disturbed, it should be blown clean or flushed before being reconnected. Scale and dirt are loosened from the inside of the line and will cause carburetor and pump trouble if not removed.

5. Excessive fuel pump pressure is sometimes caused by the use of a mounting gasket which is too thin. This will cause the rocker arm to travel too far and build up high pressure in the pump. Conversely, a mounting gasket which is too thick can cause low pressure and reduced capacity of the pump.

6. If constant vapor lock trouble occurs in a particular installation, the location of the fuel lines should be investigated. If the lines are close to a source of heat (exhaust pipe, manifold, muffler, etc.), move them as far away as possible from the heated part. A slight change in the temperature of the fuel can either cause or prevent vapor lock.

Good Tools Save Maintenance Time

IN these days of high maintenance costs any tool or piece of equipment that will save time for the mechanic should be carefully evaluated. A case in point is the impact tool used for threading and setting nuts. Studies show, for example, that you can save as much as one hour on a Chevrolet valve job with skillful use of a

(TURN TO PAGE 14, PLEASE)

AVERAGE MILEAGE UP 68%

Lee Know-How Did It!

Here, briefly, is the story of how a careful study of rapid tread wear paid off in a big way.

PROBLEM	RECOMMENDATIONS	RESULTS
To increase mileage of original treads, particularly on driving wheels ***Operation***—General trucking in Southeastern United States ***Equipment***—Tractor semitrailers ***Axle Loads***—Vary with nature of load, but always heavy ***Speed***—High-speed operation ***Roads***—Highly abrasive ***Tires Used***—10.00-20 highway type ***Average Mileage***—19,000—on roads like these it is impossible to get good mileage, but the average for this fleet was abnormally low	***Because*** abrasive road surfaces wore down treads rapidly, Lee recommended the Lee Extra Tread Tire (in same size and ply rating). This tire has approximately 40% more tread depth. With the heavier, stiffer tread members on this tire there is less scuffing, and the rate of wear is very slow. ***Because*** good mileage is impossible without correct air pressure, and because this tire requires 10 pounds more, Lee recommended that hauler permanently fix his air gauge at correct amount. This made it impossible to underinflate.	**1** The rate of wear was slower from the start. **2** During more than two years, the average tire mileage was 68% higher than it had previously been. **3** This increase in tire mileage was accomplished with only approximately 12% increase in original tire cost, so that trucker now is actually getting 50% more mileage per dollar.

Whatever your tire problem, whether treads, sidewalls, strong carcasses for repeated recaps, traction or maintenance procedures, Lee know-how can help you solve it. Bring your tire problems to Lee.

Lee Rubber & Tire Corp., Dept. 2G
Conshohocken, Pa.

Please send me information about your special engineering survey for truck fleets.

Name_____

Company_____

Address_____

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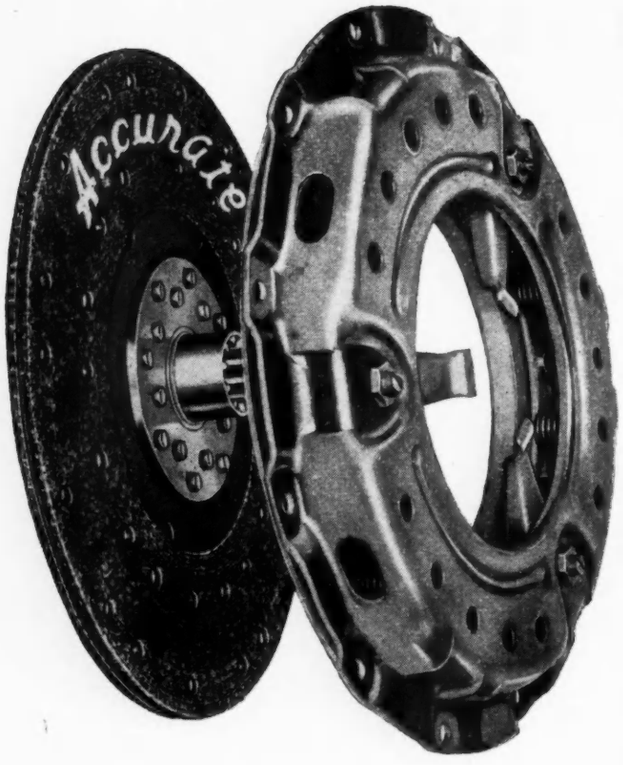
LEE TIRES

LEE RUBBER & TIRE CORPORATION CONSHOHOCKEN, PA.



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heavy-duty clutch units

custom remanufactured to your specific needs sold or economically exchanged by your ReNu-Accurate Jobber

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Replacement Unit Co. • 1505 Rockwell Ave. • Cleveland 14, Ohio

ccj At Your Service

Continued from Page 12

power wrench. Over an hour can be saved in a ring job when a power wrench is used to remove and replace such units as valve cover, rocker arm assembly, manifold bolts, spark plugs, cylinder head, water jacket mounting and rod bearing caps. A torque wrench is necessary, of course, where nuts and bolts carry specific torque specifications, and in some cases it may be necessary to "break" nuts with a regular wrench.

Other time saving possibilities for impact tools include wheel stud removal, spring overhaul, transmission and differential repair, et al.

Better than 50 per cent of all service work in the average shop involves the driving and removal of nuts and bolts, according to one source. If you can speed this work by providing more convenient tools, you can count up some substantial savings in a short period of time.

For Rough Idling Engines

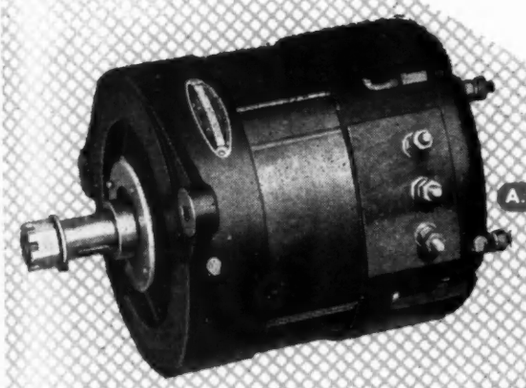
MANY operators are perturbed by engines that idle roughly and spend considerable time in trying to iron out the bumps. Some of the newer high compression engines are not designed for low speed operation, and no amount of tune up will smooth them out. Often times, when you get a smooth idle, you lose power at high speed. About all you can do is check for:

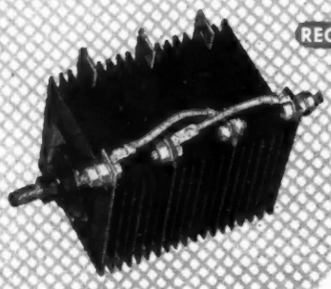
Oxidized or pitted breaker points
Faulty primary ignition wiring
Leaks in intake manifold
Improper carburetor adjustment
Improperly adjusted valves
Incorrect spark plug heat range
Too close spark plug gap
Improper spark timing (advanced)
Sticking manifold heat valve
Leaking heat riser.

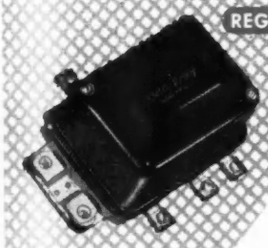
Oil Change Recommendations

THE American Petroleum Institute has qualified its previous recommendation of crankcase oil changes every 1000 miles, thereby in line with recommendations of the automobile manufacturers. Question of the 1000-mile oil change long has been a point of disagreement between the oil and automotive industries. API now has taken a position that under open highway driving conditions the interval between changes may be extended up to 2000 miles. On city and suburban driving, however, it is sticking with its old recommendation of 1000 miles and in dusty or cold weather driving the interval recommended is 60 days or 500 miles of travel.

(TURN TO PAGE 18, PLEASE)







Right for the Job!

New DELCO-REMY ALTERNATING CURRENT GENERATOR

(ALTERNATOR)

A.C.-D.C. charging system for vehicles with extra-heavy electrical loads

Here's the answer for "problem" vehicles—Delco-Remy's new long-lived A.C.-D.C. charging system! It's specifically designed to meet the *extra*-heavy electrical demands of police prowl cars, big city taxis, and other vehicles equipped with two-way radio, floodlights or any extra electrical units . . . ample current reserve picks up discharged battery quickly in operation.

With output ranging from 30-40 amperes at curb idle to 90 amperes at higher engine speeds, the new Delco-Remy A.C.-D.C. charging system meets all electrical needs under the toughest operating conditions. Included in the new system is the A.C. generator (alternator), a matching regulator for accurate voltage control and a rugged, dependable dry-plate rectifier which converts generator A.C. output to direct current.

Application packages for popular makes of cars and trucks are now available. The conversion job is simple, complete and profitable. For further details and for application data, call on your nearest United Motors distributor.

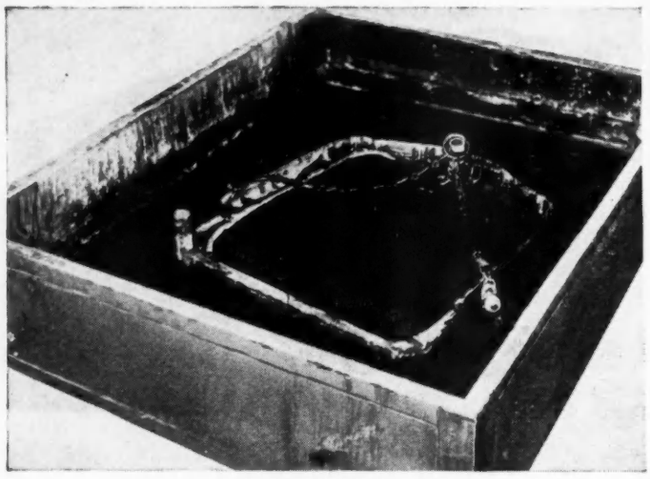
A GENERAL MOTORS PRODUCT — A UNITED MOTORS LINE

DISTRIBUTED BY WHOLESALERS EVERYWHERE

DELCO-REMY

Division, General Motors Corporation
Anderson, Indiana

WHEREVER WHEELS TURN OR PROPELLERS SPIN



Midwestern shop finds Oakite Stripper R-6 ideal for declogging radiators

New material declogs cores completely within 30 minutes... cuts man-hours 25% in removing paint!

OLDER radiators coming in for reconditioning are clogged with sludge and scale. New ones have paint that's hard to strip. Sometimes they're fouled with fluids which have leaked into the cooling system.

Field-tested coast to coast for over a year, Oakite Stripper R-6 seemed made to order for such jobs. Calling at this Midwestern motor company, the Oakite Technical Service Man suggested a trial of Stripper R-6. Results again confirmed other field reports received during the year: It declogs radiators with ½ hour's boiling. It strips paint 3 to 4 times faster. It saves 25% on man-hours by eliminating excessive brushing of cores. It cleans out radiator tanks till they shine. It has no ill effect on soldering.

No wonder this radiator expert stated that "...after searching for the ideal radiator material for many years. I've found it at last in Stripper R-6".

HERE'S HELP FOR YOU, TOO!

How to do all the cleaning, descaling, derusting and other jobs in and around garages and shops is covered in this free Oakite Booklet No. 4401. Send for your copy today. Oakite Products, Inc., 26D Rector Street, New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING

OAKITE

MATERIALS • METHODS • SERVICE

Technical Service Representatives in Principal Cities of U. S. & Canada

ccj At Your Service

Continued from Page 14

Automatic Transmission Saves Gasoline

HYDRA-MATIC Drive used in light GMC trucks is proving better gasoline mileage in a majority of cases than trucks equipped with conventional transmissions, according to a survey of Hydra-Matic truck owners conducted by the company. The survey revealed that 56 per cent of those reporting increased gasoline economy over trucks in the same weight classifications and on the same type of work.

"What's New" Department

IF you are operating engines indoors and have trouble with exhaust fumes, you may want to check up on the OCM Catalytic Exhaust muffler which actually reduces carbon monoxide to a safe level and removes fumes and odors from the engine. While many fork lift trucks are already equipped with this device, it can be adapted to nearly any such unit. The OMC Exhaust is comparable in size to the existing muffler of the engine.

Heart of the muffler is the Oxycat, a cartridge of spaced porcelain rods coated with a catalytic agent. Exhaust gases from the engine flow across the surface of the rods where combustion of carbon monoxide and other harmful vapors take place. On leaving the catalyst the exhaust contains mostly carbon dioxide and water vapor, and only slight traces of the original contaminants. The number of cartridges in the muffler depend on the size of the engine.

For Headlight Glare

THE claims of an English inventor for a new type glass which eliminates headlight glare are interesting. He says the secret formula glass he has developed, when placed in headlights and windshields, neutralizes the light from oncoming cars which are similarly equipped. Drivers can see the road ahead from their own headlights but do not see the lights from the other car. Ordinary side lights are visible to mark the approaching vehicle, however. The inventor says cost would be only about $$1.50 a vehicle and he is negotiating with a large British car manufacturer to test the device.

More Noise on Mufflers

AT least one manufacturer has promised the truck owners that an instrument will soon be available to measure and compare accurately truck noise. Truck muffler noise instrumentation is now available from present commercial suppliers, according to a speaker at the ATA Spring Meeting in Dallas. D. B. Calloway, Armour Research Foundation, urged the trucking industry, however, to adopt its own standards and testing facilities for noise measurement—before law enforcement officials impose some diverse instrumentations for them.

The quality, strength and stamina that deliver satisfactory performance under tough oil-field conditions mean low-cost maintenance, long life, and profitable payloads in every hauling operation.

BUY AUTOCARS...CUSTOM BUILT TO YOUR REQUIREMENTS

AUTOCAR TRUCKS

The Autocar Company, Ardmore, Pa.

Established 1897

Factory Branches and Distributors from Coast to Coast in the United States and Canada

●

Export Division:

Drexel Building, Philadelphia 6, Pa., U.S.A.

Clip this coupon . . . mail it today

The Autocar Company, Ardmore, Pa.

Please send me more information about Autocars custom-built to my needs.

Name_____

Firm Name_____

Address_____

Number of trucks in fleet_____

Type of Operation_____

3G

CCJ NEWS REPORTS

WASHINGTON RUNAROUND

by KARL RANNELLS Washington Correspondent

Leasing . . . Confused

At press time, House passage on the bill to amend the Interstate Commerce Act to stop the Interstate Commerce Commission from regulating the duration or method of compensation in truck leasing was still pending. ICC still hoped recent modifications of its leasing regulations, scheduled to go into effect Sept. 1, 1953, would eliminate pressure to amend the ICC Act. For a more complete report, see page 66, this issue.

Transportation . . . Plenty to Haul

A truce in Korea doesn't mean any let-up in the job ahead for highway or other transport. Biggest impact of foreign defense aid on transportation and distribution is still to come. A top defense official tells COMMERCIAL CAR JOURNAL that out of cumulative commitments made to date, through June, about 8,000,000 tons have been shipped (not counting 5,000,000 tons to Korea). This means that 25,000,000 tons of material earmarked for foreign defense aid, still on order, remains to be delivered. Included in shipments abroad, to date, have been 130,000 motor vehicles of the transport type.

NPA . . . Moves Into Commerce Dept.

It seemed certain last month that the automotive and other major industries would have their divisions carried over to Commerce Department on expiration of the National Production Authority on June 30. Under a plan submitted by Secretary Weeks to the Budget Bureau, there would be a top bureau called Business Services Administration. It would be composed in turn of the Office of Distribution and four others. Then, there would be 23 industry and commodity divisions, each headed by a top industry official, without pay, on a rotating basis. About 700 NPA and Commerce employees would comprise the operating staffs.

Motor Vehicles . . . Included in Switch

Officials told COMMERCIAL CAR JOURNAL that included in the divisional set-up there would be a Motor Vehicle and Aircraft division, broken down into truck, trailer, passenger car subdivisions. Chairman of the division is to be a leader in the automotive-aircraft industries, serving without pay for a six-month period. Advisory committees would be continued as under NPA—prominent men in the industry, meeting periodically, without pay. Idea is to coordinate government and industrial data so as to be able to meet demand, to offset or avoid low points, to adequately carry out mobilization work.

Contract Carriers . . . Must File Rates

Contract carriers who supply transportation services to the federal government must not only file schedules of minimum rates but must also furnish ICC with copies of the contracts, according to a recent ruling of Interstate Commerce Commission. Clarification came after claims were made that there is no specific ICC authority to impose such conditions, that a contract carrier has an inherent right to contract with the government at any time, at any agreed-upon (special) rate. But ICC holds that contract carriers are no different from others, that government can't pass on automatically its "immunities."

Local Cartage . . . Wants Safety Rule Relief

Modification of safety rules is being sought by the Local Cartage National Conference which would partially exempt local truckers from rules applying to the so-called dangerous commodities. Specifically, ICC is being asked to permit small quantities to be trucked within municipalities and commercial zones without regard to certain equipment requirements. No changes are asked on other issues such as work hours or driver qualifications.

ICC Funds . . . Not Much Change

Chances were dim last month that ICC would get more than a negligible increase in funds above last year's amount. Some increase was expected after the Senate and House ironed out their differences—but interim pay increases would probably wipe out most of this except for a few additional hearing examiners. Officials said they hoped to end up with about $1,700,000 for Bureau of Motor Carriers safety and field work.

Trucks . . . Not Being Counted

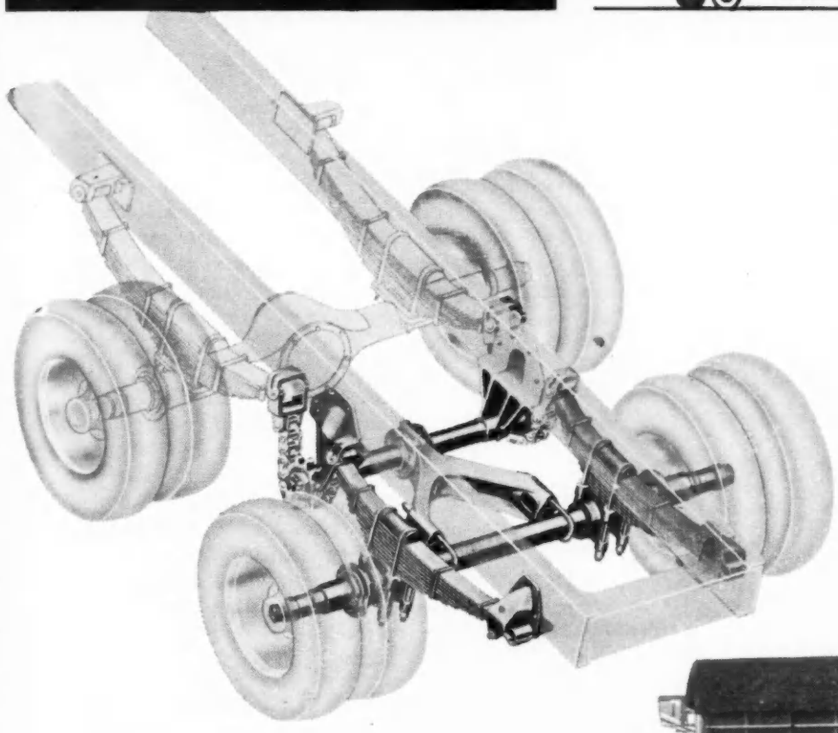
In mid-June, Congress was still mulling over whether to vote any funds for various business censuses. The House wanted to pass over everything but the Senate was insisting on nearly $10 million for the regular business and manufacturers survey. Whatever decision was made, in late June it looked as if both houses were agreed that no money would be provided for a transportation census.

Take full advantage of
NEW LOADING LAWS

Convert 4-Wheelers with

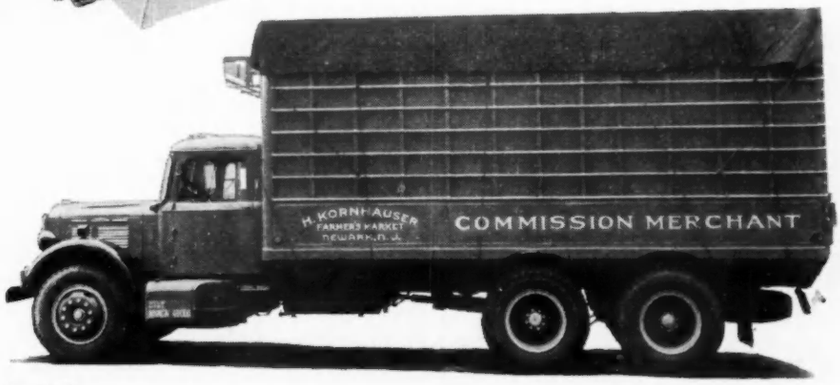
Trucktor 3rd AXLES

NEWS ITEM: Loading law changes made recently in a number of states favor the use of trailing axles.



If you operate 4-wheel trucks or tractors in any of these states, it will pay you to convert them with *Trucktor* Third Axles. You will increase your capacity without adding drivers, *and* increase the safety of drivers, trucks and cargo.

Trucktor units cut road shock in half, reduce side sway, feature a quickly detachable chain-and-sprocket 4-wheel drive for slippery roads. Maintenance costs of "Trucktored 6-Wheelers" stay low because *Trucktor* adds few working parts, lubrication points.



BROCKWAY MODEL 148-W

with 18′ produce body, Trucktor Model HR Third Axle, 10.00 x 20 tires, mechanical air brakes. Trucktor Third Axles are used by haulers of gasoline, oil, syrups . . . coal, fill asphalt . . . steel, lumber, machinery . . . grain, feed, fertilizer . . . packaged goods, dairy products, etc.

See Your Truck Dealer, Trucktor Distributor, or write direct

THE TRUCKTOR CORPORATION, Route 22, Mountainside, N. J.

Safety IS NO ACCIDENT—*6-Wheelers* ARE SAFER!

CCJ NEWS REPORTS

DETROIT DISPATCH

by LEN WESTRATE Detroit News Editor

Trucking Industry . . . Has New Committee

The Trucking Industry National Defense Committee, established after World War II, has been expanded into the Independent Advisory Committee to the Trucking Industry. It will include such groups as operators, both within and without ATA, drivers (represented principally by AFL), and suppliers to the industry, such as vehicle and trailer manufacturers, tire companies, insurance groups, etc. Objectives are to promote greater public service through better understanding of the truckers' role in peace and war, to keep the industry alert to attack, and to help mobilize the industry in cases of emergency. Chairman of the group, Dave Beck, is head of the AFL Teamsters Union. It is understood that Walter Carey, ATA president; Roy Fruehauf, president of Fruehauf Trailer; Burge Seymour, president of Associated Transport, and Beck are among the organizing group. The organization will work primarily in areas where unified action on the part of the entire industry is concerned, without interference with the particular interests and activities of each participating group.

Air Suspension . . . Developing

We cannot find any immediate prospects of air suspensions for trucks but we do know at least two companies are working with it. However, it looks as though it would be a couple of years before the development work will be far enough along to make it a practical application. One big problem is designing the proper type of supports, such as radius rods, to give lateral stability against shifting cargoes or inertia forces resulting from sudden changes in direction. Also, some type of automatic leveling valve probably would be required on the rear set of air springs to keep the body reasonably level in case of uneven loading or shifting loads.

Power Steering . . . Moves Closer

General Motors is completing tooling at its Saginaw Steering Gear Div. on two sizes of linkage booster type power steering units. Another indication that trucks in the light and medium categories will have power steering available before too long. It does not mean that GM trucks will be the only ones to have it, since the Saginaw Div. would also serve as a supplier for other makes. General opinion is that linkage booster power steering will be used almost exclusively on trucks because of lower cost and compact design which permits mounting it underneath the vehicle instead of in an already crowded engine compartment.

Production Estimates . . . In An All-Out War

The Defense Transport Administration has recommended to NPA that even if all-out war strikes, facilities should be kept intact to produce 380,000 trucks and 40,000 trailers a year for domestic use. DTA would make the breakdown 140,000 lights, 140,000 mediums and 100,000 heavies. NPA, however, favors cutting off after supply lines have run empty, turning out 170,000 mediums and 100,000 heavies a year.

V-6 Engine . . . Maybe Only Experimental

It may not be of any significance, but it is interesting that General Motors has been assigned a patent on a 60 deg. V-6 overhead valve engine. The patent applies principally to the balancing principles which include arrangement of crank pins and a counterweighted balance shaft running at twice crankshaft speed. GM is mum on its plans, pointing out merely that it, along with other companies, always has many engines under development which are never used.

Two Trailers . . . On a Flatcar

Pullman Standard Car Manufacturing Co. of Chicago has announced that it is developing the 75 ft. special flat car for accommodating two 35 ft. trailers that we mentioned last month. Pullman, however, does not indicate whether it is standing the full development costs, but we hear that other interests are helping to foot the bill. The company has built scale models of the special cars, trailers, and loading dock for early exhibition to interested transport groups. Special sidings, loading trucks, and hold-down devices are part of the development.

Light Truck Selling . . . Confused

The truck market is sticky, particularly in lighter models and we again hear reports of brutal price slashing by so-called "captive" dealers, that is, those selling both cars and trucks. Some are even reported to be giving salesmen a small commission to move the truck at invoice.

Tubeless Tires . . . In Court

A patent fight over design rights on tubeless tires is shaping up in the tire industry. B. F. Goodrich has filed suit in Federal Court in Cleveland charging Firestone with infringing certain patents on tubeless tires. Goodrich says that it offered to license the industry under its patents but that Firestone had declined the offer. For its part, Firestone says that its tubeless tires do not infringe any Goodrich patents.

One of the leading engine manufacturers to use Perfect Circle Chrome Rings for both original equipment and service requirements

Automotive engineers know that the most important piston rings in an engine are the *top* compression rings...

For they must operate where heat is the highest, where pressures are the greatest, where lubrication is the poorest...

That's why engineers specify Perfect Circle Chrome Rings. For the solid chrome plating resists wear, resists heat, and prevents scuffing and scoring of cylinders and pistons. Perfect Circle Corporation, Hagerstown, Indiana; The Perfect Circle Co., Ltd., Toronto, Ontario.

REMEMBER: 25 of the 27 leading automotive engine manufacturers using chrome rings as original equipment specify

Perfect Circle

PISTON RINGS The standard of comparison

CCJ NEWS REPORTS

JULY ROUNDUP

by ERNIE FOREST Assistant Editor

ATA Executive Committee . . . Takes Action

American Trucking Assns. Executive Committee met last month, went on record as opposing the pending reorganization plan for the Interstate Commerce Commission. The plan, drafted by the Wolf Management Engineering Co. for the Senate Interstate and Foreign Commerce Committee, would set up the ICC along functional lines, placing all forms of transportation together for regulation under such headings as Safety, Regulation, Rates, etc. Principal reason for the Committee's opposition was that such a plan would virtually eliminate the Bureau of Motor Carriers and thus conflict with ATA's 18-year-old policy that motor carrier regulation should be under a separate bureau.

In other actions, the Committee voted to:

Obtain recognition by the ICC of an 85 per cent operating ratio, before taxes, as a yardstick for determining the reasonableness of motor carrier rates.

Propose to the ICC that the present complaint case against alleged abuses of freight forwarder certificates be changed to a rule-making procedure.

Oppose any minimum wage law for the trucking industry.

Continue support of the Bureau of Public Roads, the Federal-Aid Highway program and the WASHO Road Test in Idaho.

Appoint an ATA committee to meet with the International Brotherhood of Teamsters to explore functions of the two groups to determine what common problems exist.

PAR . . . Aims at 1955

Also last month in Washington, D. C., some 150 representatives of highway users, industry, civic groups and farm organizations attended an all day conference of the PAR (Project Adequate Roads) movement. From GM's Albert Bradley, Greyhound's Arthur Hill and National Highway User Conference's Roy Jorgensen, they got a progress report at the national level. From active PAR leaders in Tennessee, West Virginia, Oklahoma and Wyoming, they heard how PAR had helped to secure anti-diversion amendments and road building priorities in their respective states.

Out of the meeting came PAR's new goal—"An adequate highway program in every state by 1955." To lead the drive, Clem D. Johnson, businessman and civic leader from Roanoke, Va., was named chairman of the national PAR committee. He also heads the policy committee for the Chamber of Commerce of the U. S.

Some Differences . . . Eased

Differences between the Private Carrier Conference of ATA and the Transportation Assn. of America (see page 62, Feb.) apparently have been eased. Private Carriers have withdrawn their request that the ATA Executive Committee reconsider its endorsement of TAA. However, a private carrier spokesman noted that TAA would be viewed by the Conference as primarily promoting the interest of common carriers.

Others . . . Still Dividing

But common carrier, private carrier differences still seemed to need settling in the interests of a common front against railway opposition. Private carriers attending Pennsylvania Motor Truck Assn's annual meeting last month were warned that the common carriers would probably introduce restrictive legislation in Congress come January, 1954.

Almost at the same time, Roland Rice, ATA Regular Common Carrier Conference general counsel, speaking in Boston at Northeastern University's Transportation and Traffic Management Conference, said that it is widely believed today that many private carriers are actually engaged in transporting freight for compensation in competition with certified or permitted carriers. He recommended amendment to the IC Act to correct these inadequacies if the national transportation policy is to be carried out.

Road Test . . . Going Full Scale

Full scale testing on the WASHO Road Test at Malad, Idaho, resumed last month and will continue until frost brings it to a halt in the fall. According to the announcement, about two additional months testing in the spring of 1954 should complete the project.

Trucking industry spokesman said failure of the deliberately underdesigned sections could cause temporary delay. Sub-base of the test road varies from 0 to 16 in., they said, and failure of the sub-standard sections can well be expected.

ATA Foundation . . . In Business

Contribution of $100,000 by Fruehauf Trailer Co. last month indicated firm industry support of ATA Foundation, Inc. This new activity of the American Trucking Assns. was incorporated in May on a nonprofit basis to enable trucking industry suppliers to

(TURN TO PAGE 164, PLEASE)

INTERNATIONAL LEADS 6-WHEELER FIELD

Proved performance

makes the sales leader

your best buy

The heart of the 6-wheeler is the bogie

New International RF-195 ROADLINER. Gasoline, LPG or diesel power. Famous Comfo-Vision cab. GCW rating 55,000 lbs.

"Tough Job" engineering has made International Trucks the heavy-duty sales leader for 21 years. International 6-wheelers give you proved performance PLUS the famous International bogie with the third differential.

INTERNATIONAL BOGIE ADVANTAGES

The third differential and power divider allow each wheel to rotate independently. There is practically no tire scuffing, "axle fight" or power loss. Perfect matching of tires is unnecessary. Fuel consumption is lower. Under adverse conditions, the third differential can be locked out, giving positive traction to both axles.

Abnormal tire wear eliminated because International bogie design *always* keeps wheels parallel to frame.

Reduces road shock by 50%. "Walking action" design keeps chassis frame and body level while bogie "walks" over obstructions and levels out the road.

Extra strength without extra weight. More payload per pound of chassis weight results from elimination of unnecessary dead weight. Strength is concentrated where needed.

Load stresses equalized. Load is carried from the frame to the axles at *four* points.

Compare performance . . . value . . . and price. Get all the facts on International 6-wheelers—*proved* for top performance and greater operating economy—from your International Dealer or Branch today.

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23 NEW 6-WHEEL MODELS

GVW ratings, 22,000 to 90,000 lbs. Engines from 130 to 356 horsepower. Choice of gasoline or LPG fuel systems. Diesel engines available for models with GVW ratings of 30,000 lbs. and over. Transmissions, axle ratios to meet any requirement. America's Most Complete Truck Line—168 basic models from ½-ton pickups to 90,000 lbs. GVW off-highway models.

International Harvester Builds McCormick Farm Equipment and Farmall Tractors . . . Motor Trucks . . . Industrial Power . . . Refrigerators and Freezers

Better roads mean a better America

INTERNATIONAL TRUCKS

"Standard of the Highway"

Lifting the Haze from ICC

Dates To Remember

June 30, 1953.

All vehicles equipped with an air brake system must have an audible or visible signal to indicate loss or lack of air in the system sufficient to prevent the vehicle from being stopped. (193.51)
Vehicles manufactured after this date must have all service brakes operated by one valve. (193.49)
Vehicles manufactured after this date, if equipped with an air or vacuum brake system, must have a reserve capacity or reservoir sufficient to insure that brakes can be applied within a safe stopping distance in the event the engine stops. (193.50)
Trucks or truck-tractors manufactured after this date when used to tow a trailer equipped with brakes must be equipped with a device which will prevent loss of braking capacity on the towing unit as well as the towed unit in the event of a breakaway. (193.43)

Sept. 1, 1953.

Solid fuel heaters are prohibited for use in heating the interior of any motor vehicle. (193.77)

Sept. 30, 1953.

New and stringent requirements must be met for fuel system equipment (1) manufactured after this date when used as replacement, (2) used on all vehicles manufactured after this date. (193.65)

Jan. 1, 1954.

Drivers must meet new physical requirements (191.2, 191.8); must be re-examined at least once every 36 months (191.9); and must possess a certified examination report from a doctor to the effect that they meet ICC physical requirements. (191.10)
Carriers must ensure that all drivers meet the necessary requirements and are examined within the specified period (191.8, 191.9). Also carriers must have on file at their principal place of business a copy of the physical examination report of each driver. (191.10)

June 30, 1954.

Buses made after this date with air brakes must meet front air line breakage safety requirements.

Several changes in regulations and new interpretations of existing regulations have been issued by the Interstate Commerce Commission since the new safety regulations were announced in May a year ago (CCJ, June '52, page 67). In addition, several of the regulations then announced are scheduled to become effective within the next few months.

In cooperation with the ICC, COMMERCIAL CAR JOURNAL has compiled the following study of revisions, interpretations and commentaries on the regulations which have been changed or are due to come into effect. It is suggested that all fleet operators affected by these regulations clip this material and file it for ready reference with their regulatory data.

For convenience of readers, most of the material is listed in the same sequence as it appears in the ICC published regulations.

Drivers

NEW physical requirements for drivers go into effect January 1, 1954. These are outlined in the ICC regulations, sections 191.1 to 191.13. Included in these rules: drivers must pass a specified physical examination and must receive a specified report form from a licensed doctor of medicine to this effect; drivers must be re-examined at least once in every 36 months thereafter; drivers must possess and carriers must have on file in their principal place of business either the doctor's report or a photostatic copy of it.

Not specified in these sections, but required by ICC record-keeping policy is the requirement that copies of the physical examination for drivers, and the carrier for a five year period.

SIDELIGHTS: In a discussion with ICC representatives, it was asked if the ICC might recommend a method for determining who would bear the cost of the physical examination for drivers, and also the cost of the copies of the doctor's examination report. The answer: both of these questions are strictly matters for employer-employee negotiation; no suggestions will be made by the ICC.

For itinerant drivers or those operating out of a union pool, the new regulations require that each employer be supplied with, and file, a copy of the doctor's examination report on the

Safety Regulations

Changes in rules since original version have many fleetmen wondering where they stand. Here are revised rules, interpretations, and effective dates

driver. This means that drivers working for short periods for several employers must have a supply of copies of the examination reports, and carriers hiring these men will have a steadily growing file of such reports. In the case of drivers being hired from a union pool, it was asked if the ICC would permit employers to waive the requirement for a copy of the driver's examination report as long as such a copy was on file with the union pool.

While the ICC representatives admitted some merit to this suggestion, it was felt that it could possibly defeat the purpose of the regulations, which is to ensure that the responsibility for determining the physical qualifications rests clearly on the carrier. For this reason, no exemption from these regulations will be granted.

Brakes

SEVERAL new regulations covering brake equipment became effective June 30, 1953.

SECTION 193.43 requires that every truck or truck-tractor manufactured after that date, when used to tow a trailer equipped with brakes must have a means for providing that the service brakes on the towing vehicle will be sufficiently operative to stop the towing vehicle in the event of a breakaway of the trailer.

SECTION 193.49 requires that every motor vehicle manufactured after June 30, 1953 which is equipped with power brakes "shall have the braking system so arranged that one application valve shall when applied operate all the service brakes on the motor vehicle or combination of motor vehicles. This requirement shall not be construed to prohibit motor vehicles from being equipped with an additional valve to be used to operate the brakes on a trailer or trailers or as provided in Section 193.44. This section shall not be applicable to driveaway-towaway operations unless the brakes on such operations are designed to be operated by a single valve."

SECTION 193.50 requires that every bus, truck and truck-tractor manufactured after June 30, 1953 which is equipped with an air or vacuum brake system "shall be equipped with reserve capacity or a reservoir sufficient to insure a brake application capable of stopping the vehicle within the stopping distance requirements of Section 193.52 (within 30 feet from a speed of 20 mph on dry, smooth, level road free from loose material) in the event the engine stops. No such reserve capacity or reservoir shall be required if the braking system is so designed as to provide for application of the service brakes through hydraulic or mechanical means in event of the failure of the air or vacuum system or the source of supply of such systems."

SECTION 193.51 became effective June 30, 1953, affects ALL buses, trucks and truck-tractors which are equipped with an air brake system. It requires that the vehicle be provided with either an audible or visible warning signal to indicate readily to the driver any loss of air sufficient to prevent the vehicle from being stopped. It specifies that the pressure gage is not sufficient to meet this regulation, although ICC officials have indicated that the buzzer, flashing light, or wig-wag signals now being marketed are acceptable.

SECTION 193.44 becomes effective factured after that date which are June 30, 1954, affects all buses manu- equipped with air brakes. Since it was originally published, however, it has been amended to exclude those buses being transported in driveaway-towaway operations. It specifies protective devices required in the braking system for use in the event of a failure or breakage in any of the front brake lines.

Fuel Systems

ORIGINALLY scheduled to go into effect at the beginning of 1953, the regulations covering fuel systems have been postponed, amended and interpreted. Following is the corrected wording of the regulations with the Commission's interpretations shown in italics after the sections to which they refer. Paragraphs (a) to (e) (1) inclusive apply to all tanks. All other paragraphs refer only to gasoline fuel tanks.

193.65 FUEL SYSTEMS—(a) *Fuel container location.* No part of any fuel tank or container or intake pipe shall project beyond the overall width of any motor vehicle upon which it is mounted. No part of any fuel tank shall be located forward of the front axle of the power unit upon which it is located, except that this requirement shall not apply to trucks manufactured prior to September 30, 1953, which have a total fuel capacity of less than 20 gallons, nor shall fuel be supplied to the engine of a bus, truck or truck tractor from a fuel tank or container located on a semi-trailer or full trailer.

(b) *Fuel container on bus.* No part of any fuel tank or container or intake pipe shall be located within or above the passenger-carrying portion of any bus unless securely sealed off from such compartment by means of a substantial metal cover. Except for buses having a seating capacity of eight or less persons and except those being transported in driveaway-towaway operations, the fuel containers, including intake pipes, caps, and vents on every bus, the date of manufacture of which is subequent to September 30, 1953, shall be so designed that, in the event of overturn, the fuel will not be spilled at a rate in excess of one ounce per minute.

(c) *Gravity or syphon feed prohibited.* No fuel system on a meter vehicle shall be so constructed as to permit gravity or syphon feed direct to the carburetor or injector.

An ICC interpretation dated May 21, 1953 states: "The installation of a fuel pump between the fuel tank and the carburetor or injector is considered as a means of complying with this requirement if the fuel pump is such that when operating in its normal manner, the fuel will flow to the carburetor or injector

(TURN TO NEXT PAGE, PLEASE)

Leasing Situation . . .Fluid

Despite much debate, litigation and modification, Regulations covering leasing and interchange of vehicles by motor carriers are scheduled to go into effect Sept. 1. Basic thought behind the rules: to require that motor carriers using leased equipment meet the same standards and hold the same degree of responsibility with the leased units that they must meet with their own equipment.

Although many of the rules have been protested, and in some cases modified, most fireworks have been caused by the sections which would prohibit leasing periods of less than 30 days and would regulate the compensation which may be paid by the carrier using the equipment. Both of these provisions, it is felt, would mean an end to trip leasing, except for limited provisions for farm-owned vehicles.

At press time, a bill was before Congress which would amend the Interstate Commerce Act to prevent the ICC from regulating either the period or the compensation to be paid for leased vehicles and would, in effect, make trip leasing legal.

Whether or not Congress knocks out the ICC's authority to set a time limit or regulate compensation, the rest of the regulations will probably go into effect Sept. 1. As an aid to fleetmen affected by these regulations, a study and commentary on the rules, similar to the material presented here on the safety regulations is being planned for the August issue of CCJ.

. . . ICC Safety Regulations

Continued from Page 65

by action of the fuel pump and not by action of gravity. In other words, the fuel pump must not assist gravity to induce the flow but must be the sole impelling force."

(d) *Selector valves.* If a motor vehicle is equipped with a selector control valve for fuel feed from two or more tanks, such valve shall be installed so that either (1) it is in normal reach of the driver so that he can readily operate it without taking his eyes from the road or moving from his customary driving position, or (2) the driver must stop the vehicle and leave his seat in order to operate the valve.

(e) *Liquid fuel tank requirements.* (1) Every liquid fuel tank or container containing fuel for the propulsion of the motor vehicle shall be of substantial construction, free from leaks, and securely attached to the motor vehicle.

(2) Replacement side-mounted gasoline tanks, the date of manufacture of which is subsequent to September 30, 1953, on every motor vehicle, and side-mounted gasoline tanks on every motor vehicle, the date of manufacture of which is subsequent to September 30, 1953, shall comply with the requirements of paragraphs (f) to (k) inclusive of this section.

Officials of the ICC pointed out that if a fleet operator has a supply of replacement side-mounted tanks which meet present regulations, he may continue to use them for replacement purposes on his vehicles after September 30, 1953. *However, once it becomes necessary to use tanks of this type manufactured after September* 30, 1953, *he must ensure that they meet the new requirements.*

(3) Replacement gasoline tanks, of the other than side-mounted type, the date of manufacture of which is subsequent to September 30, 1953, unless constructed in conformity with the original tank on the motor vehicle, shall comply with the requirements of paragraphs (f) and (i) of this section. Other than side-mounted gasoline tanks on every truck or truck-tractor, the date of manufacture of which is subsequent to September 30, 1953, shall comply with the requirements of paragraphs (f) and (i) of this section.

(f) *Liquid fuel tank construction.*—(1) *Material.* Material used in the construction of the tank and its fittings shall be suitable for the purpose intended.

(2) *Joints.* Joints of the tank body shall be closed only by arc, gas, seam, or spot welding, brazing, or silver soldering.

An ICC interpretation of this, dated May 21, 1953, *states: "The use of soft solder for sealing such joints, but not for attaching parts which must be done by the methods shown, will be permissible, provided the tank can meet the requirements of Sub-section* (*j*) (3) *when that section is applicable.*

(3) *Fittings.* The tank shall be provided with suitable flanges or spuds for the assembly of all fittings.

(4) *Threads.* Threads on all fittings shall be American (National) Standard Taper Pipe Thread or SAE Standard Short Dryseal Taper Pipe Thread. There shall not be less than four full threads in engagement in any fitting.

(5) *Drains and bottom fittings.* Drains and other bottom fittings shall not extend more than ¾ inch below the lowest part of the tank and shall be designed or guarded to minimize their being torn loose. All drain fittings shall be so designed and located as to permit complete drainage. The drain shall be located in a suitable flange or spud.

(6) *Fuel discharge line.* The fitting through which the fuel is drawn from the tank shall be located above the normal full line of the tank.

(7) *Excess flow valve.* When pressure devices are used to force fuel from the tank, means shall be provided to prevent the continued flow of fuel in the event the fuel feed line is broken.

(8) *Fill-pipe design.* The fill-pipe shall be designed and located so as to minimize the probability of its being torn loose in the event of an accident. The fill-pipe and vents on any fuel tank having a fuel capacity in excess of 25 gallons shall be so designed and constructed as to permit filling at a rate of at least 20 gallons per minute without spillage.

(9) *Air vent.* Every fuel tank shall be equipped with an air vent of a non-spill type (ball check or equivalent). The air vent may be mounted separately or combined with the filler cap or safety vent.

(10) *Safety vents.* (i) Side-mounted fuel tanks having a fuel capacity in excess of 25 gallons shall be provided with a fusible safety vent or vents which shall be so designed as to limit the pressure rise in the tank under any fire condition to a maximum of 50 pounds per square inch gage. The vent area shall be sufficient to prevent a rise in pressure in the tank of more than 10

(TURN TO PAGE 102, PLEASE)

John Bull Sells Back His Trucks

Nationalization experiment ended. In the shuffle, truckers draw $250 million tax bill

BY RALPH CROPPER
CCJ's London Correspondent

FINAL approval of legislation to return the British inter-city "for hire" trucking industry to private ownership was recently achieved with the signing of a new Transport Act by Queen Elizabeth shortly before her coronation.

While the necessary legal steps have been taken, it will still take several months before the changeover can be accomplished. Plans for the transfer of operating rights and equipment to private owners are expected to be completed by the fall of this year, with a probability of independent fleets again being in operation by the turn of the year at the latest.

Under the new Transport Act, the British Transport Commission, the nationalized transport control body, has to sell off the trucking side of its business as soon as possible. It will, however, continue to exist, primarily as controller of the still-nationalized railways as well as certain canals, ports and harbors.

The trucking business is to be split up into small sections called "transport units" which are to be offered for sale by public tender. Under the terms of the legislation, no "transport unit" may be larger than 50 trucks without the special permission of the Minister of Transport. To ensure that the industry is not dominated by large companies and syndicates, it also requires that a number of small "units" be offered for tender.

To watch over the selling-off arrangements, a new body is being set up. Known as the Road Haulage Disposal Board, it has two main functions: to see that the Commission proceeds immediately with the sale of the trucking business; and to safeguard the public revenues by examining all the prices paid for trucks, equipment, properties, operating rights and other assets to assure that fair prices are obtained.

The Transport Act intends that the sale of the assets of the nationalized trucking corporation should realize as high a yield as possible. At the same time, complete disposal of the business must not be prevented by setting the price too high. Obviously a nice balance has to be maintained between these two intentions, and the Disposal Board will have no easy job.

From the purchaser's point of view, the most attractive aspect of trying to obtain a transport unit lies in the

(TURN TO PAGE 118, PLEASE)

What Price Socialism?

Britain's venture into the field of nationalized truck transport, now being terminated, has proved to be an expensive experiment for the nation and for all highway operators. It is estimated that the total cost will exceed $250 million.

To pay this bill it will be necessary to add another levy to the already heavily-taxed highway transport industry—with private carriers required to share the bill with the "for hire" operators.

For all fleetmen in this country there are conclusions to be drawn from this experiment. Among them: there is a need for continuous efforts to guard against any attempt to "nationalize" or otherwise handcuff the trucking industry; that the time and money for these efforts is well invested; and that private carriers would not be immune to the effect of "monkey business" in highway transport regulation. . . . The Editors

Does the Public Benefit from Size and WEIGHT RESTRICTIONS?

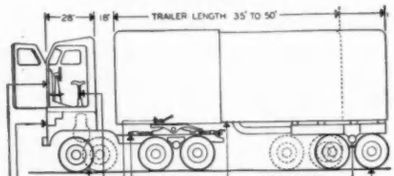
No! Says noted engineer who argues that arbitrary limits on essential and economic highway transportation do not serve the public interest*

EQUITABLE size and weight legislation is that which fosters the most efficient use of the combination of the vehicle and the highway, to the end that the public will receive the maximum return on its investment in highways and bridges through convenience, celerity and economy of transportation. The test of any type of legislation is whether it benefits the public.

If this is the issue, then the answer must be definitely in the negative. Beneficial results can hardly be expected from legislation premised on a fallacy and present size and weight restrictions are lacking in any sound foundation, either scientific or economic. They are not consistent and they give palpable evidence on their very face that the legislators who framed them had little or no conception of the essential economics of highway construction.

Regardless of special taxes levied on truck operators, it is the public in the end which pays for highway transport operation as well as the roads over which the vehicles run. Therefore, the more economically trucking service can be conducted, the less the public has to pay for everything it buys and the more profit potential there is in everything it produces and sells.

Horine Special



Totally adjustable combination seems only way to comply with various limits

By Merrill C. Horine
Mack Mfg. Corp., New York

*Condensed from SAE paper

There is no question that the cost per ton-mile of moving a load is inversely proportional to the amount of load carried. Two 5-ton loads will cost more to move a given distance in a given time than one 10-ton load. It is therefore in the public interest that highway vehicles of the largest practicable capacity for which loads can consistently be found, be generally employed. But economical operation does not depend on the vehicle alone. The highway is an essential part of the economic equation.

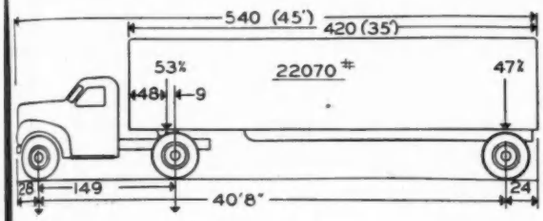
Optimum Loads

DOUBTLESS there is a point at which further increase in vehicle capacity would cease to be economical, and also it is to be expected that there is a limit to the highway load capacity which it would be economical to construct. Somewhere along these respective curves there will be a crossing. That is the point where the maximum economy of the road and the vehicles on it will provide the lowest overall cost per ton-mile to move the public's goods.

Whether consciously or not, it is this optimum which in their motor vehicle size and weight laws, our various states seek to attain. The question before us here is how successful these laws have been in this direction. Unfortunately, though numerous research projects have been started which seek to establish factual bases for evaluation of the economic relationships between highways and vehicles, these have not as yet yielded comprehensive or conclusive results.

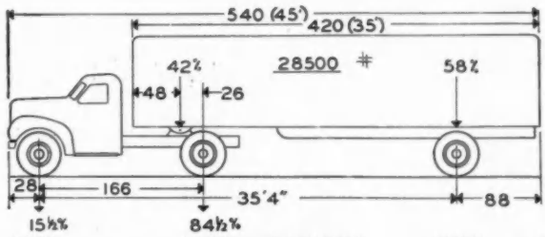
Perhaps the prime reason why present size and weight restrictions have failed to benefit the public is that they seem to have as their objects first, the preservation of a highway

Various Combinations show Impracticability of Bridge Formulas, Axle Weights



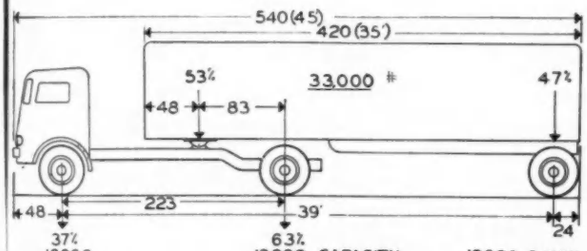
6%	94%			
9000	18000	CAPACITY	18000	45000
7000	7000	CHASSIS	2500	
700	11000	GROSS LOAD	10370	
7700	18000	G C W	12870	38570
		FORMULA LIMIT		64000

This four-wheeled tractor and single-axle semi is set up to provide maximum bridge formula allowance. Although tires and axles have a combined capacity of 45,000 lb., the limit by axle weight, the (L+40) x 800 formula allows 64,000 lb on the strength of the 40-ft axle spread. But real controlling factor is weight on the tractor axle. Position of king pin puts 94 per cent of front trailer weight on rear tractor axle, distributes load as indicated. Practical gross is but 38,570 lb. There is no benefit to be gained from 64,000 lb allowance by formula.



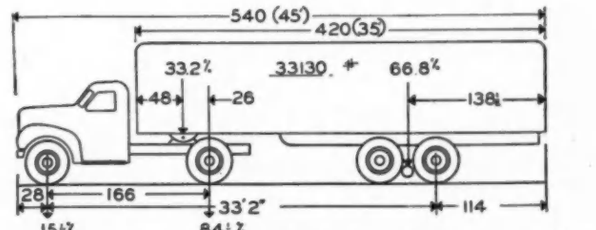
15½%	84½%			
9000	18000	CAPACITY	18000	45000
7000	7000	CHASSIS	2500	
2000	11000	GROSS LOAD	15500	
9000	18000	G C W	18000	45000
		FORMULA LIMIT		60000

Same combination with trailer axle moved 24 in. ahead and fifth wheel offset at 26 in. instead of 9 in. This decreases front trailer weight on tractor rear axle to 84½ per cent and increases load on both front and trailer axle. Total weight on each axle is now 9000, 18,000 and 18,000 lb for GCW of 45,000 lb. But formula still allows 60,000 lb. Greater capacity than this would require more weight on front axle. If we were to fit dual tires on the front wheels—possible with power steering—we would have an axle capacity of 54,000 lb.



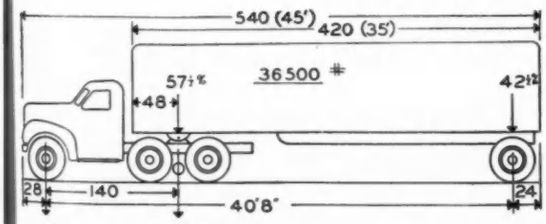
37%	63%			
18000	18000	CAPACITY	18000	54000
8000	7000	CHASSIS	2500	
6500	11000	GROSS LOAD	15500	
14500	18000	G C W	18000	50500
		FORMULA LIMIT		63200

Here king pin has been advanced 83 in. ahead of tractor axle and trailer axle put back as far as possible. With 14,500 lb on COE front axle, GCW can be boosted to 50,500 lb. But axle spread is 39 ft which would reduce formula limit of 63,200 lb.



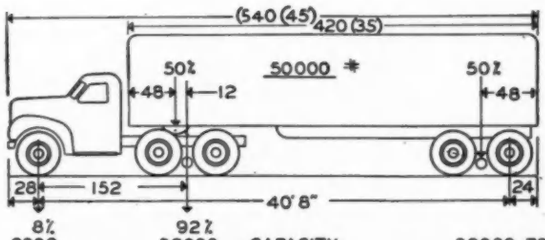
15½%	84½%			
9000	18000	CAPACITY	32000	59000
7000	7000	CHASSIS	4500	
2000	11000	GROSS LOAD	22130	
9000	18000	G C W	32000	59000
		FORMULA LIMIT		56800

With four-wheeled tractor and tandem trailer it is possible to adjust fifth wheel offset and trailer tandem to actually load each axle to legal maximum. But here the axle spread is a trifle shy of that required to qualify for GCW under bridge formula.



0%	100%			
9000	32000	CAPACITY	18000	59000
7000	9000	CHASSIS	2500	
0	21000	GROSS LOAD	15500	
7000	30000	G C W	18000	55000
		FORMULA LIMIT		64000

This is an attempt to improve the picture by using a six-wheeled tractor and single-axle semi. This provides the same axle capacity but trailer axle capacity does not provide full loading of tractor bogie. Actual GCW is way under formula allowance.



8%	92%			
9000	32000	CAPACITY	32000	73000
7000	9000	CHASSIS	4500	
2000	23000	GROSS LOAD	25000	
9000	32000	G C W	29500	70500
		FORMULA LIMIT		64000

Using six-wheeled tractor and tandem semi we get an axle capacity of 73,000 lb. of which 70,500 lb can be practically utilized. But hold the phone. With 40 ft 8 in. axle spread, the bridge formula permits only 64,000 lb—6500 lb short of practical limit.

system which through short-sighted planning, political promotion and 10 years of neglect during and following World War II, is inadequate; second, the singling out of a scapegoat—the heavy truck—for the failures of the politicians; and third, handicapping motor transport for the benefit of the railroads.

It is as though the wattage of electric current consumed by users were to be limited for the sake of preservation of transmission lines of inadequate capacity; the size and number of bath-tubs restricted to conform with the capacity of superanuated water mains.

(TURN TO PAGE 142, PLEASE)

Main office building at Long's new Detroit terminal. Safety lane is at far right rear

BETTER ACCIDENT INVESTIGATION

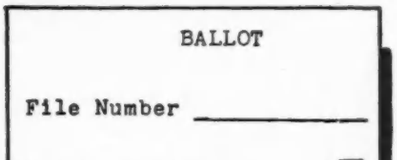
Ups Morale, Lowers Fleet

By George B. Foster
Director of Personnel & Safety
Long Transportation Co., Detroit

FOUR months after we activated our revised safety program, accidents had declined 2 per cent per 1000 miles of travel.

But it is the improvement in morale and in relations between drivers and the personnel department, the headaches that have been eliminated, that we cherish most. These have largely transpired because we abolished the personal element in judging driver accidents. We substituted impartiality for personalities.

We stress and interpret safety in terms of accident because the two are inextricably linked. Therefore we consider our new system of reviewing accidents impartially most important to the success of our safety program. This impartiality insures the driver a square shake and he knows it. Simultaneously, a heavy load has been removed from the safety director for he no longer makes the decision of finding the driver guilty or innocent. Both drivers and safety director benefit.



BALLOT

File Number _____

Not Preventable A☐
B☐

Preventable C☐
D☐

Fig. 1. Only a file numbe appears on review boar ballot which provides fou alternatives concerning de gree of driver's guilt

Fig. 2. After action of r view board, driver is no fied by means of this stan ard report form. He has l days to appeal a case

ACCIDENT REVIEW BOARD REPORT

COMPANY _____ DATE _____

DRIVER _____

The report of your accident which occurred on _____ has been carefully analyzed by our accident review board. Under our method of classification the circumstances as indicated in your report indicate that the accident is _____ and this information has been recorded on your driving record.

It is not enough that we observe all traffic regulations. Expert drivers must also practice the principles of "defensive driving" - driving so [illegible] they can [illegible] against [illegible] that

Five member accident review board votes by ballot and

Accident Review Board

TO ACHIEVE utter impartiality in judging accident cases, the first thing we did was to appoint an accident review board which sits in judgment of all accidents of the previous month on the first Monday of the following month. This board is permanently comprised of five members; the highway union steward, a highway driver with a good driving record, a representative of the insurance underwriters, our own superintendent of maintenance and a member of the traffic division of the Detroit police department.

These permanent members of the accident review board are well equipped by reason of knowledge and

Fleet's Ratio

Police officer Guy Mulholland explains case to review board while President Wayne Long (non-voting) makes strictly guest appearance

DRIVER FOLLOWUP CHECK

NAME_____ DATE_____

The above driver is on a 30 day trial basis, which ends on _____

Please check the following questions:

1.	Does he appear	Aggressive	Average	Backward
2.	Is his personality	Good	Average	Unpleasant
3.	Apparent attitude toward safety	Very Good Good	Fair	Poor
4.	Any evidence of drink	Yes	No	
5.	Appearance	Neat Clean	Dirty	Slovenly
6.	Does he appear honest	Yes	No	
7.	Answer questions	Quickly Doubtful	Sure	Nervous
8.	Any "Wise-Guy" or "Fresh" attitude	Yes	No	
9.	Have you noted his driving ability	Good	Fair	Poor
10.	Do you think he will fit into our organization	Yes	No	

REMARKS: _____

DATE_____

_____
(Terminal Manager's Signature)

MOH:yp

Fig. 3. New drivers are placed on 30-day probation. One check-up made during the interval is this report from all terminal managers

LONG TRANSPORTATION COMPANY

EQUIPMENT INSPECTION
(LANE)

Date_____ Trailer No._____

Terminal In_____ From_____

Out_____ To_____

Wheel Lugs_____ Tire Pressures_____

Lights_____ Brakes_____

Tarp_____ Ridge Pole_____

Dolly's Up_____ Seal_____

Check Safety Equip. Torches_____
Flares_____
Flags_____
Extinguisher_____

Tire Size_____ Brand No._____

Single Axle:_____

RRI_____ LRI_____

RRO_____ LRO_____

Tandem
RFI_____ LFI_____

RFO_____ LFO_____

Trac. No._____ Time In_____
Out_____

Driver_____

Inspector_____

Remarks_____

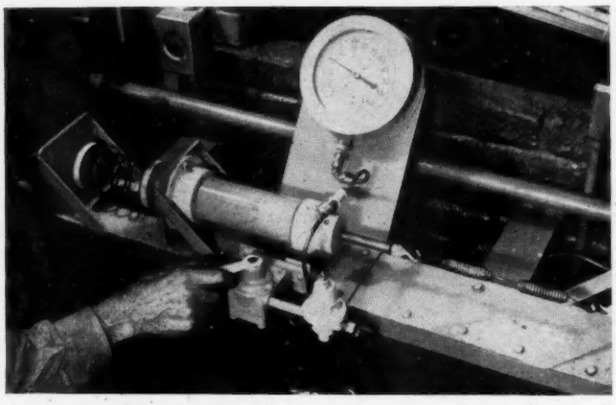
Fig. 4. As an aid to vehicle inspections this report is used on Long's safety lane

by file number. The safety director has no vote. Thus complete impartiality is obtained

experience to know what constitutes either good or bad driving practice. Furthermore, because they judge accidents from the viewpoint of their own varied experience, a fairer judgment of the accident and the driver's role in it can be made.

Patrolman Guy Mulholland is the police department member of our board. His help has been of particular value because for years his sole job has been teaching and lecturing upon good driving practices to literally hundreds of clubs, organizations

(TURN TO PAGE 132, PLEASE)



Brake Spring Tester

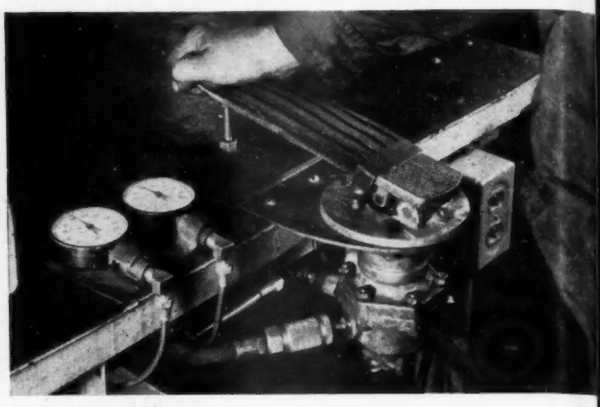
This spring tester guarantees better brake balance and improves braking efficiency. Designed around a modified door opening valve this machine makes possible a check of either brake chamber springs or pull back springs for tension. On this tester weak springs can be located and matched sets can be made up for axle pairs.

Brake chamber springs are mounted on the hooks at the left side and air from the shop supply is applied through the door opening valve to a predetermined pressure (in this case 15 lb). The length of the spring under compression is measured on a steel rule set behind the piston rod. Other springs meeting similar standards are paired up for reuse.

Pull back springs are tested on the right hand side of the device. Only springs of specified free length are salvaged. Those meeting specifications are paired up and reused.

This and the several other shop-designed devices on this page make possible the accurate balancing of brakes. Safety is a rule at South Penn, and good brake work is emphasized in every phase of maintenance.

Tools and jigs of this type can be made up easily and cheaply in any fleet shop. They will make your brake work much simpler.



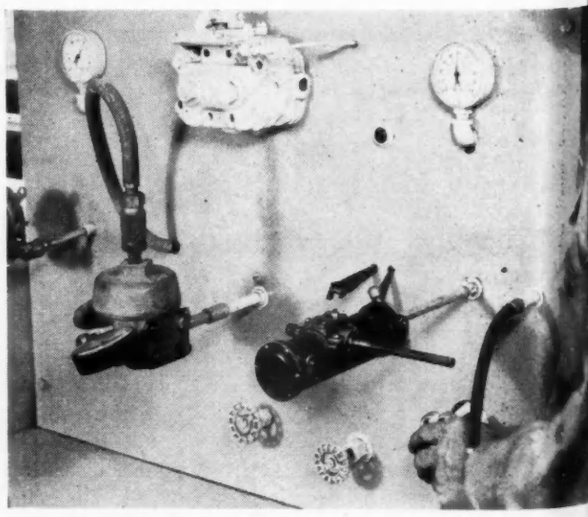
Air Switch Tester

The air switch tester is used to check the stop light switch, low pressure indicator and similar units. A light on the bench, or a bell underneath shows valve actuation at gage pressure. A modified limiting valve permits mechanic to vary air pressure as required. Mechanic can make checks after simply mounting the manifold in a vice and connecting the air and electrical lines.

Big Ideas

The big ideas developed by maintenance men in the shops of Southern Pennsylvania Bus Co. Chester, Pa., are paying off in better and quicker maintenance. Shop tools and equipment, designed at the bench by men who know what they want, is instrumental in keeping these buses out of the shop and on the streets earning revenue.

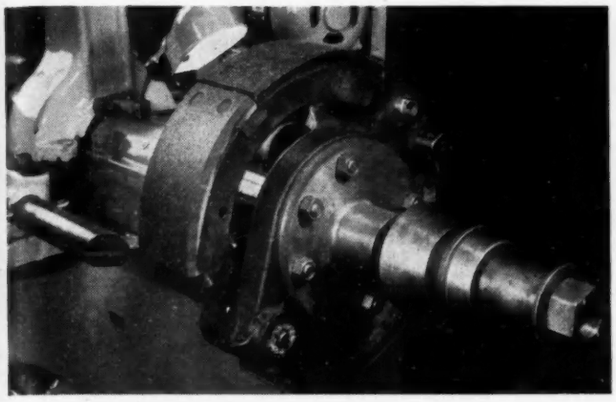
The big sign with the word "THINK" above the maintenance superintendent's desk is more than a motto; it is an expression of company policy which promotes the development of ideas and streamlined maintenance procedures. The following proves the point.



Air Unit Test Board

On this board arrangement is made to check 1. governors, 2. compressor head valves, 3. low pressure indicator, 4. stop light switch, 5. windshield wiper motor, 6. various air valves. Air is supplied from the shop line. Wiper motors are run in on this unit after overhaul to assure proper operation when installed on the bus.

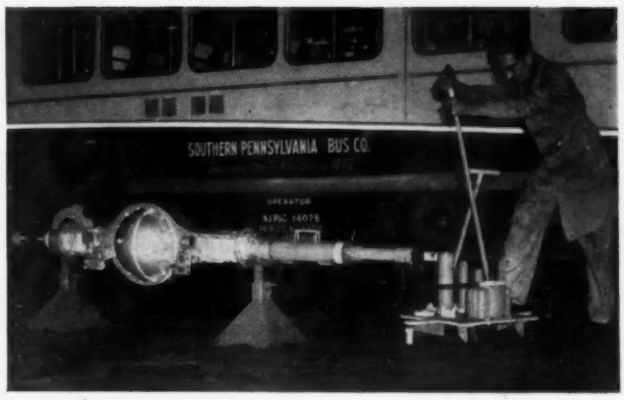
Details of construction are not provided since tester is comparatively simple. Main requirement is a source of air, with adapters and holding fixtures for mounting various valves. One gage shows shop air line pressure, the other actuating pressure of the unit undergoing test. Other similar testers on this page and on page 76 are used for same checks.



Brake Shoe Cam Grinding Jig

This simple fixture holds the brake shoes while they are ground on the brake drum lathe to the exact radius of the drum. Shoes are mounted just as they would be on the spider, and a modified grinding tool is used to turn them.

The cam grinding feature is made possible through a regular brake cam which is set into the spider in the applied position and locked so that shoes are ground on a cam.



Axle Tube Sleeve Puller

This simple axle tube sleeve puller is made up from a hydraulic ram, a portable pump and a fixture for connecting the puller head to the axle tube. Sleeves can be removed and replaced in a matter of minutes with this shop-made unit. Pump and actuating units are mounted on a steel plate with outriggers to hold it level while it is being used. Three casters and a pipe handle provide for easy movement.

Expedite Bus Maintenance

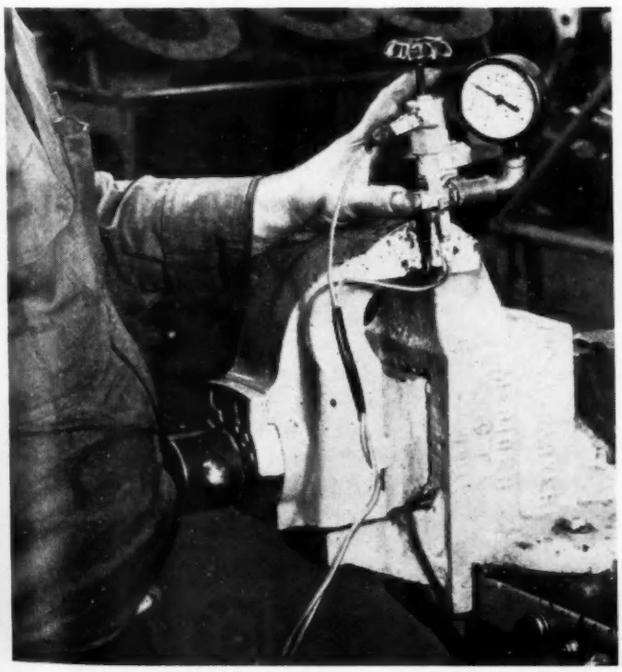
Brake Valve Tester

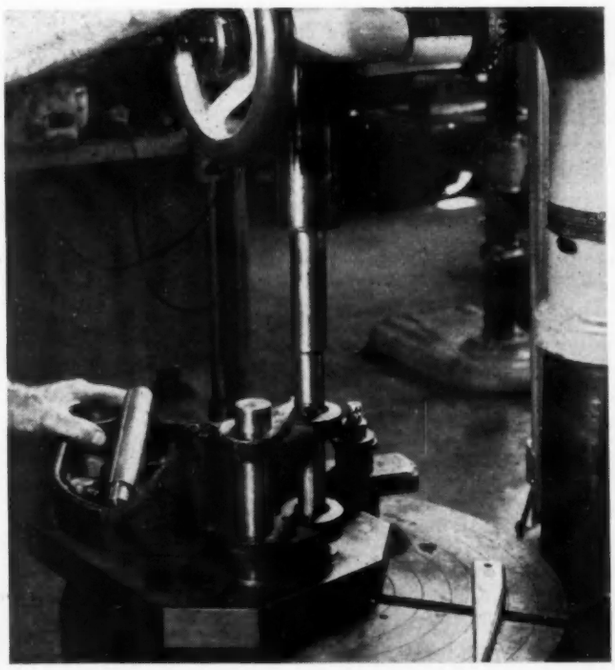
The brake valve tester consisted of an accelerator pedal and plate, a stop to limit or vary travel, and two gages, one to show shop air line pressure and one to show application pressure at a specified pedal travel.

All rebuilt valves are checked on this device before going into stock. This check assures proper valve action at full travel, thus providing for similar pedal operation on all buses. It saves the necessity of making adjustments after the valve has been installed. Tester is mounted on the bench where units are overhauled.

Brake Spider Jig

Brake spiders are rebuilt to a high degree of accuracy on this mandrel or fixture which permits accurate locating of the anchor pin hole reamer in the drill press. Guides in the fixture correspond to the anchor pin holes so that off center reaming is impossible. Pin holes are reamed to oversize and a bushing is inserted, thus providing for many more miles of operation. The cam bearing is also modified in this rebuild. The old bushing is drilled out, and the cam bushing housing is lengthened. A longer bushing is installed, and spider life is lengthened appreciably.





VEHICLE FIRES . . . Training Will Put Them Out

Driver instruction in truck fire prevention and control saves critical minutes when he is faced with a fire on the highway, will reduce the loss

PUTTING a fire extinguisher in a truck is not enough. Chances are, if the truck caught fire, the insurance settlement check would not cover all repair—*or replacement*—costs on the truck, lost vehicle time and the red tape costs of investigation and reports.

On the other hand, a fire extinguisher *plus driver training in vehicle fire prevention and control* will certainly minimize the chances of incurring those costs, might lead to a reduced insurance rate. And such a training program can be added to existing safety programs at little or no cost to the fleetman.

Points to be included in educating drivers in truck fire contro! and prevention can be grouped under five headings:

1. Preventive checks before the trip.
2. Preventive checks in case of an accident.
3. What to do when there is a fire.
4. How to use fire extinguishers.
5. What to do after a fire.

Pre-Trip Check

SO THE shop says the truck is ready to roll. At this point, most efficient fleets look it over, make sure it is ready for a road trip, and, before a good driver takes it away, he'll look it over himself to be sure it is in safe operating condition. Specific fire prevention checks that should be included in these pre-trip checks include:

1. Are extinguishers, flares and other emergency equipment ready for use?
2. Are the tires OK? Are there any flats or soft tires?
3. Is the load evenly distributed to keep an undue proportion of the weight off any one tire? Heat generated by excessive flexing of an overloaded tire is a fire hazard.
4. Do the brakes work properly? Does the parking brake release fully?
5. Are the lights working as they should?
6. Are there any fuel tank or fuel line leaks? Is the fuel tank secure and does it have the proper cap on it?
7. Is the vehicle free of dirt, grease, oil, solvents, rags, trash and similar fire hazards?
8. Are the muffler and exhaust pipe on securely?
9. Does the cargo being hauled on this trip need any special fire protection equipment or care?

Out on the Highway

WHEN everything is all secure and rolling smoothly out on the highway, the driver still has to keep in mind one prime fire hazard—smoking.

Smoking always causes its share of fires. A lighted cigarette or match flicked out the window is liable to blow back into the cab behind the driver, into the truck body or onto some spilled gasoline. Next wrning the driver gets is liable to be a small of smoke—if he gets any warning at all. It is better to have an ash tray in the truck.

Naturally smoking should be prohibited with flammable cargo or when refueling the truck. But as logical as

When You Have a Fire Here's What Can Be Done

- **Pull off the road, out of the way of other traffic or buildings.**
- **Turn off the ignition, get out, take the extinguisher along.**
- **Have someone else call the fire department.**
- **Use the extinguisher to fight the fire.**
- **Watch for a possible fuel tank explosion.**
- **Dam up leaking gasoline.**
- **Fight fires in an enclosed space without opening the area wide.**
- **Separate tractor from trailer if it is a combination on fire.**
- **Do not get into a tight corner in fighting the flames.**
- **Use dirt and sand if the extinguisher is emptied before fire is out.**
- **Let the fire department take charge when they arrive.**

Driver Education Decides What Is Done and When

it sounds, this no smoking rule needs constant reminder.

In An Accident?

IF THE truck stops along the way, a brief inspection by the driver can prevent a fire. If the truck is involved in an accident or has mechanical trouble on the road even though no fire is involved, in addition to his routine accident procedures, the driver can reduce chances of a fire occurring by:

1. Turning the ignition off.
2. Checking for fuel leaks.
3. Disconnecting battery to avoid possible electrical shorts and sparks if vehicle is wrecked.
4. Having a look at the tires. If a flat tire caused him to stop, there may be a smouldering fire there that needs immediate attention.
5. Checking the cargo for anything that may have been upset and be a fire hazard.

Interstate Commerce Commission and various state regulations require the setting out of warning devices when a truck is stopped for any reason on the road. One reason for this: many a fire has resulted from someone else coming along, banging into the rear of a stalled vehicle, spraying the scene with burning gasoline.

By Ernest S. Forest
Assistant Editor

This, the driver's part in fire prevention and control, concludes a three part series aimed at eliminating fire hazards and reducing fire losses in fleet operation. The first part, on shop fires, appeared in the January issue, page 86, and the second, on reducing fire causes by preventive maintenance, appeared in the June issue, page 74 . . . The Editors.

The Vehicle Fire

CHANCES are, though, sooner or later, most drivers will be faced with a fire on their own vehicle or on someone else's. An adequately trained driver will be able to successfully put it out. A driver faced with a fire has to (1) act fast, (2) keep a cool head, (3) know how to use available extinguishers and (4) size up the situation, know what it is possible to do.

Without previous training, the driver is not in a good position to do any of these.

There is no set order of fighting a fire. It depends on the location of the truck, what part is aflame and how big the fire is. Listed below are several points for drivers in fighting a truck fire. In addition to learning these possible "courses of action," the driver's training should include instruction in fast analysis of the fire he is faced with so he can act promptly with an effective plan of action.

Possible courses of action in that effective fire fighting plan include:

- Pull off the road and out of the way of other traffic, buildings, materials and the like that may catch fire.
- Turn off the ignition, get out and take the extinguisher along.
- Have *someone else* call the fire department. Be free to fight the fire, prevent its spread and protect the vehicle and cargo.
- Use the extinguisher to fight the fire, keeping the wind blowing toward the fire. Aim the extinguisher stream at the base of the closest flames, spraying them in a sweeping motion and advance to the source.
- Watch for a possible fuel tank explosion. If it is leaking and supplying fuel for the fire, try to isolate it by extinguishing the flame between it and the rest of the fire.
- Dam up leaking gasoline to prevent its spreading the blaze beyond control.
- When the fire is in an enclosed space—under the hood, in the body, try to fight the fire without opening

(TURN TO PAGE 124, PLEASE)

Shop Hints

Here are some swell time savers for fleet shops. Let us have your ideas for new tools or short cuts to service. We'll pay $10 and $25 for good ones.

$25

To Bench Test Governors

By Elmer Royer
Southern Penn Bus Co.

Here is a handy way to check air brake governors at the bench. Cut-in and cut-out pressure can be set accurately after unit overhaul so that no further adjustment is necessary once it is installed on the vehicle.

The device consists of a manifold made from brass stock with two holes drilled to coincide with the inlet and outlet apertures of the governor body. This is secured to a base plate with a sliding wedge to hold the governor body. The unit is clamped into the fixture and tightened with a quick threading screw at the rear. A rubber gasket set between the governor body and the manifold is compressed so that no air leaks occur.

Shop air is admitted through a modified limiting valve, while pressure is read from the gage. In this way valves are checked for leakage as well as for setting. You can make one of these yourself with very little time and effort.

Broken Screw Drivers

By Louis R. Boston
Mechanic, Honey Krust Bakery Co.
Lexington, Ky.

Broken screwdrivers aren't always a complete loss. If you have two of them with broken tips, here is how you can use them to hold and oil pan in position while putting in the bolts. Saw off the broken tips and weld on

Regroover and Shop-Made

By R. H. Vermillion
Mechanic, Col. Springs Transit Co.
Colorado Springs, Col.

With this shop hint you can use a piston regroover—in this case a Perfect Circle Manulathe—to cut a chamfer on the lower edge of the piston oil ring groove. Three new guide pins are made of ½-in. steel

Small Part Display Makes

By John Devlin
2746 Beach Drive
Merrick, N. Y.

A large board mounted on the parts counter can be used to save both the mechanic's and the parts clerk's time in locating the correct sized part. Each part carried in stock —nuts, bolts, cotter pins, washers, screws and even larger parts, such as

Cart Stands on End

By Frank P. Coulomb
3932 West 64th St.
Inglewood, Cal.

Many drum carts are dangerous when being loaded. They tend to fly out from under when a full drum is being tipped onto them. This cart stands on end for loading, has an angle iron catch to hold the drum as both cart and drum are lowered to horizontal position. The cart is made from ½ by ¼ by 2-in. channel iron and scrap sheet iron welded together. Cross bands for holding the drum are 3/16 by 4-in. flat iron. 3-in.

Can and Tubing Holder

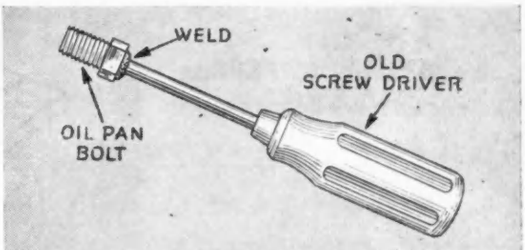
By Arthur R. Tanner
RFD No. 1
Cold Spring, N. Y.

Paint, glue, gasket cement and cans holding similar compounds usually present a sticky outside for handling. Here is a container to prevent getting messed-up. Take a shallow can large enough to hold the sticky container and a 9-in. length of copper tubing. Flatten a 2½-in. length on both ends of the tubing in a vice. Cut down the center of one of these

Used to Hold Oil Pan

$10

standard oil pan bolts. Grind the end of the bolts for easy starting. Use one of these adapted screwdrivers on each end of the oil pan. They will hold the pan so you can insert and tighten the other oil pan bolts.



Tool Cut Piston Chamfers

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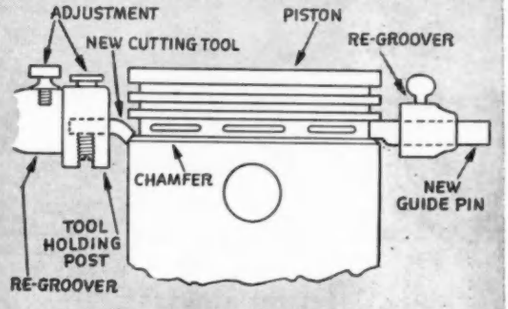
rod with one side ground flat to fit the oil groove so they will slide over the slots and oil holes smoothly. A new off-set cutting tool is then made of the correct angle and placed in the tool holding post.



Identification Quicker

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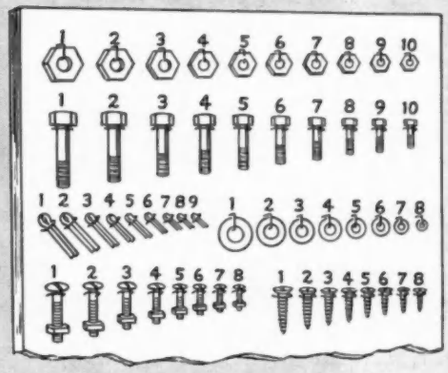
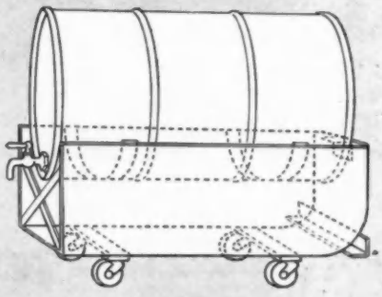
tubing fittings and gaskets—are fastened to the board and marked with an identifying number. All the mechanic has to do is compare what he wants with the display and ask the clerk for the part by number, eliminating guess-work as to size.



For Loading Full Drums

$10

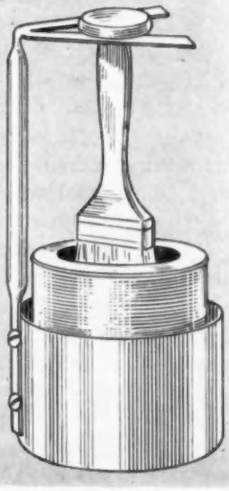
casters are fastened to 1/4 by 4-in. flat iron. Casters in front are swiveled and those in the rear stationary. At the rear of the frame is welded a 3-in. angle iron "knee." At the top of the cart in the rear, shown in the sketch in dotted lines, weld a hook of 1/4 by 3-in. flat iron to catch under the rim of the drum. When placing drum on cart, stand cart on end, roll drum over hook and lower cart to floor.



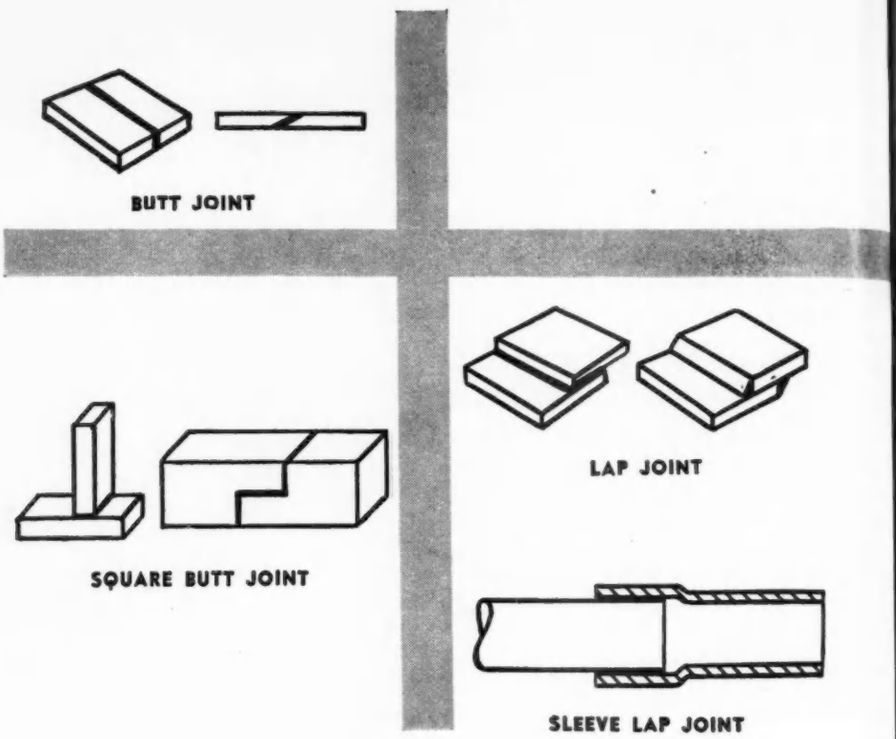
Made for Sticky Liquids

$10

flattened ends with a hacksaw and bend it until it is at a right angle with the rest of the tubing. Spread the two halves of the cut end to form a V. In the other flattened end, drill two holes for fastening to the shallow can with machine screws. When this handle is fastened on the shallow can, the applicator will hang from the V, free of the liquid.



By Arthur L. Phillips
Eutectic Welding Alloys Corp.



Non-fusion method of joining metals at low temperature reduces distortion, warpage, internal stresses

LOW TEMPERATURE

DURING the last 25 years welding technology has advanced so rapidly that it is difficult to keep pace with the latest discoveries. Valuable equipment is being scrapped unnecessarily because there are techniques available to the fleet shop today which will salvage most broken or worn parts.

The three generally accepted forms of metal joining are welding, brazing and soldering. The introduction of alloys by the Eutectic Welding Alloys Corp., with the highest possible affinity for the parent metal and formulated for properties, gives the strength associated with fusion welding, at a heat far below the melting point of the base metal.

Surface alloying is, as its name implies, the alloying of one metal with another. The strength of the bond will depend upon the alloy's ability to diffuse into the base metal. It is for this reason that alloys are selected for their affinity to the metal. It is the degree of affinity that determines to a large extent the amount of diffusion and depth of penetration. Thus it is possible to use a metal with an extremely low melting point to form a bond at a temperature far below the melting point of the parent metal. As the metal diffuses into the parent metal a new alloy is formed with characteristics of both metals.

The advantages are obvious. The less heat used in joining operations the better. Excessive heat will cause distortion, warpage and embrittlement. It will change the properties of the metal. In fact the cause of most joint failures can be traced to excessive heat somewhere along the line.

In all joining operations the cost factor must come first. This does not necessarily mean money. It may mean time, the cost to a company of inoperative equipment, loss sustained through delay, or in an emergency the value of a speedy repair. These are factors which must be taken into consideration.

The cost of the alloy must be related to the amount used to complete an operation. Labor costs must be taken into consideration with both of these factors. Ease of application, the necessity of skilled or semi-skilled operators and the strength of the joint must be taken into account. It is inadvisable, therefore, to determine cost by any single factor. The cost of the finished job must be estimated before a true evaluation can be made.

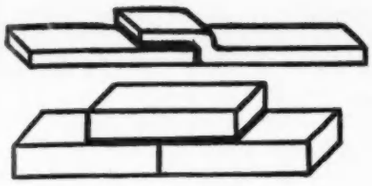
Torch Joining

THE most suitable heating medium should be selected for the operation to be performed. A torch should be used for parts which are too limited in numbers to use mass production methods. A torch is best when parts are too large for furnace or induction joining and in operations where a thin section is to be joined to a relatively thick one.

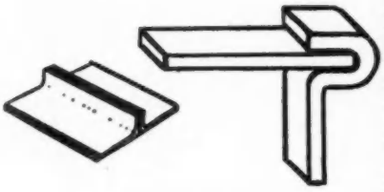
The torch is under the control of the operator at all times. He can vary the type of flame, or the amount of heat, to suit any stage of the operation. It is ideal, therefore, for parts with poor thermal conductivity or where over-heating is to be avoided.

Oxy-acetylene torches are the most popular and widely used. City gas-and-air, and oxy-hydrogen mixtures are sometimes used.

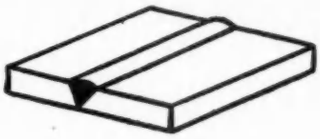
There are three types of flame used



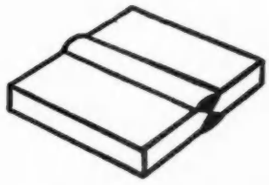
LAP JOINT



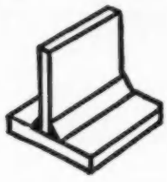
FLANGE JOINT



BEVELED BUTT JOINT



DOUBLE BEVELED BUTT JOINT



FILLET WELDS

WELDING for the Fleet Shop

in torch joining: neutral, oxidizing and carburizing.

In general, a neutral flame is preferred when oxidation of the parent or weld metal is to be avoided. When small deposits of carbon are present on the parent metal it may be necessary to use an oxidizing flame. The carburizing, or excess acetylene flame, has the lowest temperature of the three types; the oxidizing the highest. It thus is possible to regulate the intensity of flame to the work being done.

Fluxes

FLUXES have been developed to a high state of efficiency. Their function is to remove surface oxides; lower surface tension; promote bonding, act as a wetting agent; have a cleaning or solvent action and act as a vehicle for the alloy.

When a bond is made to a surface upon which an oxide has formed, the bond will rarely be stronger than the

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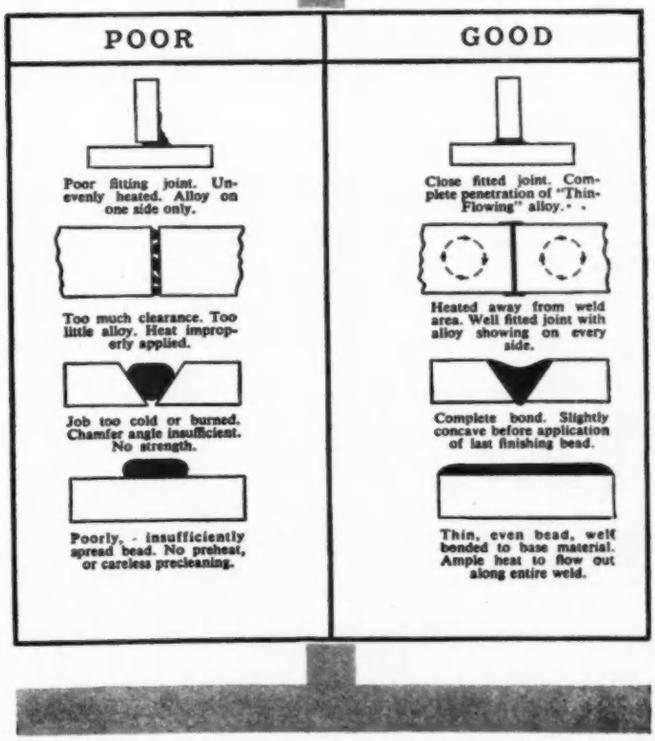

POOR
GOOD
Poor fitting joint. Unevenly heated. Alloy on one side only.
Too much clearance. Too little alloy. Heat improperly applied.
Job too cold or burned. Chamfer angle insufficient. No strength.
Poorly, - insufficiently spread bead. No preheat, or careless precleaning.
Close fitted joint. Complete penetration of "Thin-Flowing" alloy.
Heated away from weld area. Well fitted joint with alloy showing on every side.
Complete bond. Slightly concave before application of last finishing bead.
Thin, even bead, well bonded to base material. Ample heat to flow out along entire weld.

U. S. REEFER TESTS

Show Importance of Equipment and Loading

Department of Agriculture testing leads the way to more uniform "in transit" tempera-

FOR truckers engaged in long-distance hauling of frozen commodities, it is important that trailer refrigerating equipment be capable of maintaining a constant low temperature. Any extensive rise generally affects the quality of the cargo, resulting in unhappy customers and frequently in claims or loss of business for the truck operator.

In cooperation with certain shippers, carriers and manufacturers of trailer refrigerating equipment, the Marketing and Facilities Research Branch of the U. S. Department of Agriculture has been conducting a series of tests on equipment and loading methods under typical operating conditions. The following is a selective condensation of the Department's reports on the current series of tests in which the cargo was frozen citrus concentrate shipped by truck from Florida to northern terminals during the Summer and Fall of 1952.

This is the first published article which analyzes and groups the results of the tests together.

Variable Conditions

IT IS important that readers note the varying conditions under which these tests were conducted.

Fig. 1. Mechanical Refrigerating Unit

In a conventional trailer, top commodity stayed cool but bottom of the load showed wide temperature range.

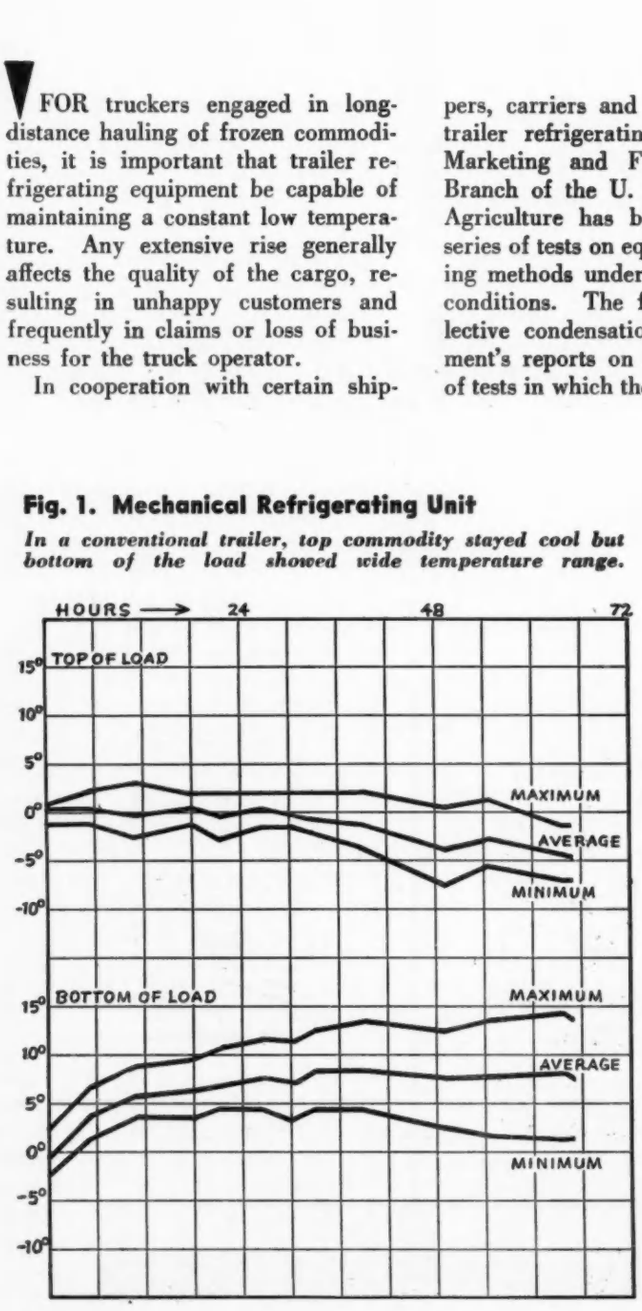
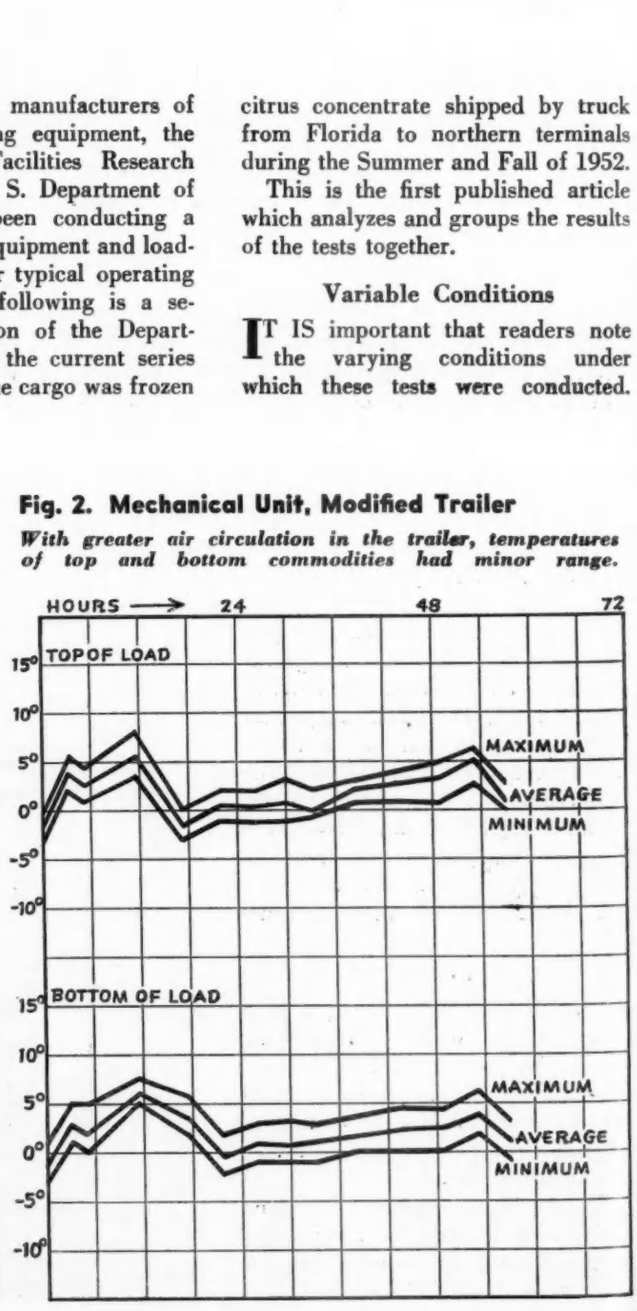
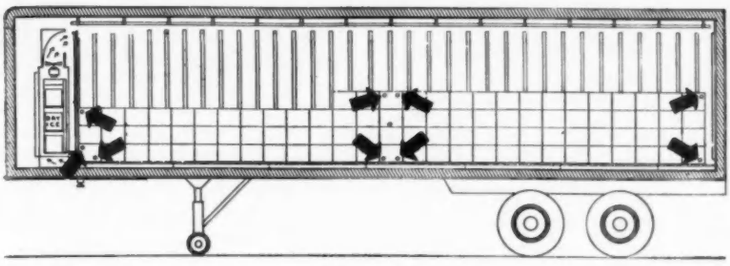


Fig. 2. Mechanical Unit, Modified Trailer

With greater air circulation in the trailer, temperatures of top and bottom commodities had minor range.





Relative positions of thermometers placed in the cargo to record "in transit" temperatures during each test are shown here

tures for frozen cargoes, shows reefer needs and ability

The tests were *not* set up to draw a comparison between the various types of equipment or loading methods, and were only intended to provide an authentic performance report of the equipment under the conditions existing during the test.

For this reason, each test has been reported separately, and care has been taken to avoid leading readers into making false comparisons. In presenting the results of the test, the Department of Agriculture was particularly careful to avoid drawing conclusions from tests which were not conducted under parallel conditions.

However, some general conclusions may be drawn from the tests. It may be seen from tests 1 and 2 that sufficient air circulation about the load is important to avoid "hot spots" in the cargo. From tests 3 and 4 it may be seen that a bunker-type refrigerating unit with air circulating equipment uses considerably less dry ice and maintains a lower, more uniform cargo temperature than is possible with loading cakes of dry ice directly on the cargo. From all the tests it is apparent that there is a need for rapid unloading of the product at destination to prevent a sharp rise in temperature.

Test Methods

Three basic types of refrigerating methods were studied in the tests: mechanical cooling apparatus, systems using dry ice as the coolant, and a loading method in which dry ice was placed on the load itself. Tests were conducted to observe the ability of the equipment to keep the load at or near loading temperature during transit and in some cases, precooling tests were also conducted.

All tests were supervised and recorded by Department of Agriculture observers. Established scientific methods were observed for determining the temperature of the cargo or trailer during preliminary cooling

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Fig. 3. Dry Ice On Load

Lacking sufficient air circulation, cargo temperatures at top and bottom ranged beyond satisfactory limits.

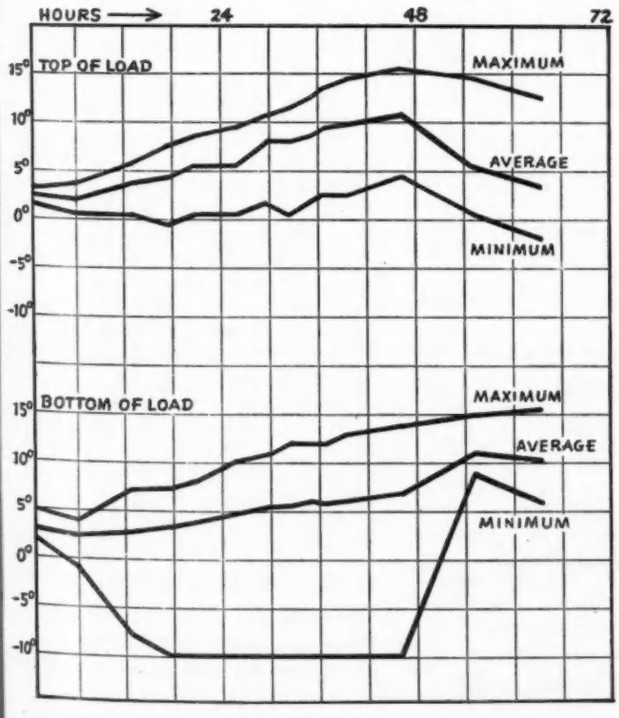
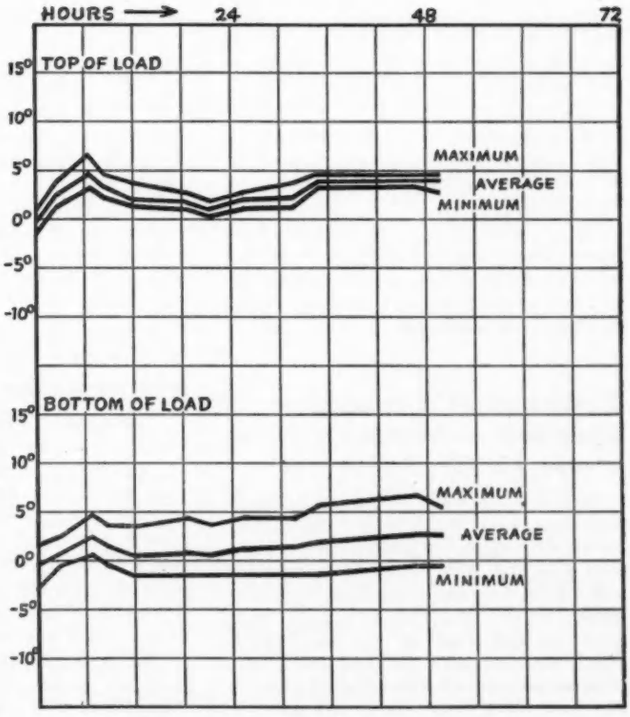


Fig. 4. Bunker-type Dry Ice System

Temperatures at top and bottom of load showed minor range in transit, were held at or near loading point.



U. S. Reefer Tests

Continued from Page 81

tests, during loading, in transit, and during unloading. Electrical resistance thermometers were installed in the trailers in such a way that readings could be taken enroute without opening the trailer doors.

1. Mechanical refrigerating equipment—conventional loading

Refrigerating Unit: Mechanical.

Trailer: Standard 30-foot stainless steel with six inches of fiberglass insulation and lengthwise floor channels ⅞ in. deep by 1⅛ in. wide, vertical side-wall channels ¾ in. deep by 6⅝ in. wide.

Precooling Test: Not conducted.

Transit Test: The cargo was loaded directly from the cold room to the trailer during a 45-minute period with the trailer temperature at 50°F. The trailer doors were then closed and the refrigerating unit started, with the thermostat set at 0°F. After 23 hours and 40 minutes the thermostat was reset to —5°F. Time elapsed from the beginning of loading to the end of unloading was 66¾ hours. Outside temperature during the test ranged from a low of 73°F to a high of 98°F, with an average outside temperature of 82.2°F.

Cargo temperatures were recorded enroute, usually at intervals of from four to six hours. Cargo in the top of the load had a maximum transit temperature of 3.0°F and a minimum of —7.5°F with an average of —1.4°F. Cargo in the bottom of the load had maximum and minimum transit temperatures of 14.5°F and —2.5°F with an average of 6.4°F. The temperature range is shown graphically in Fig. 1.

Observations: There was a greater rise in the temperature of the load in the bottom positions than in the top. This was believed due to inadequate circulation of air about the cargo.

No protection was given to the load during loading or unloading other than to complete the process as quickly as possible in order to keep exposure to outside temperature to a minimum.

2. Mechanical Refrigerating Equipment — Modified to Increase Air Circulation

Refrigerating Unit: Mechanical, same type as used in Test 1, but equipped with an air duct extending from the top of the floor ribs and with air channels on each side of the floor, up to and enclosing the intake of the refrigerating unit. It was built the full width of the trailer to a point slightly above the customary load level to serve as a bulkhead against which the load could rest. Above this point it was narrowed to approximately the width of the refrigerating unit.

Trailer: Modified 30-foot stainless steel with six inches of fiberglass insulation and lengthwise channels in the floor 3 in. deep by 1¼ in. wide. Vertical air channels were provided by V-shaped crimping of the metal walls with the peaks of the crimps six inches apart and 1¼ in. high, and the bases of the channel measuring about four inches. A 9¼-inch high metal sheet was set parallel to and about five inches from each wall, running the length of the floor from the door to the face of the refrigerating unit. This arrangement formed two air channels 5 in. wide by 9¼ in. high on each side at floor level. Purpose of these modifications was to adapt the trailer to show the effect of added air circulation about the load.

Precooling Test: Not conducted.

Transit Test: The trailer was precooled to 0°F as regulated by the thermostat on the refrigerating unit. Cargo was loaded directly from the cold room to the trailer over a period of 55 minutes. When loading was completed, the doors were closed and the thermostat was set at —3°F. After 17 hours and 50 minutes the thermostat was lowered to —5°F. Time elapsed from the beginning of loading to the end of unloading was 64 hours and 40 minutes. Outside temperatures during this period ranged from a low of 72°F to a high of 95°F with an average outside temperature of 81.7°F.

Maximum temperature in the top of the load during transit was 8.0°F., minimum was —3.0°F., with the average 1.9°F. In the bottom of the load, in-transit temperatures were: maximum 7.5°F.; minimum —3.0°F.; average 1.7°F. The "in-transit" temperature range is shown in Fig. 2.

Observations: The load was maintained at a more uniform temperature in this trailer than was possible in the trailer used in Test No. 1. It is notable that there were decidedly lower temperatures in the bottom of the load, due mainly to the better air circulation provided.

3. Dry Ice Loaded Directly On and About the Cargo

Refrigerating Unit: Although a mechanical unit was installed as emergency protection, the actual refrigeration of the load was provided by blocks of dry ice placed on and about the cargo. No fan or other means of circulating the air in the trailer was employed, since the method under test was based on the theory that the cold released by the dry ice on top of the load would flow downward by convection.

Trailer: Standard 30-foot stainless steel with six inches of fiberglass insulation. Lengthwise floor ribs provided air channels ¾in. high by 1 in. wide. Vertical wall strips provided channels ¼ in. deep and 6½ in. wide for circulation of air down the sides of the load.

Precooling Test: Not conducted.

Transit Test: The trailer received very little precooling and was loaded within a 55-minute period. It was initially iced with 1,632 lbs. of dry ice cakes placed in staggered positions in the top of the load. Seven cakes of dry ice were placed on the floor between the door and the cargo. This original icing was expected to maintain satisfactory temperatures for the duration of the trip. However, approximately 15 hours after loading a steady rise in temperature at most positions in the load was noted.

With temperatures in the cargo continuing to rise, it was necessary to rearrange the ice 34 hours after loading. At this time the mechanical unit was started. Approximately five hours later, six cakes of dry ice were placed beside the intake of the mechanical unit to further cool the air being circulated. This affected the thermostat which shut down the mechanical unit for the rest of the trip.

Approximately 44 hours after the initial icing, an additional 1,000 lbs. of dry ice were placed on the load. Twelve hours later, lower temperatures were recorded. At the end of the trip approximately 300 lbs. of dry ice remained, so that about 2,300 pounds were used during the test.

A period of 67 hours and 55 minutes elapsed from the time loading began until unloading was completed, with outside temperatures ranging from a low of 73°F to a high of 98°F, with the average at 83.9°F.

In-transit temperatures in the top of the load ranged from —2.0°F to 15.5°F and in the bottom of the load from —10.0°F to 15.5°F. Average temperature in the top of the load was 6.3°F and in the bottom was 5.5°F. This data is shown graphically in Fig. 3.

It should be noted that the minimum temperature in the bottom of the load was recorded at a point at which there was a concentration of dry ice not found in the rest of the load. If this reading had been excluded, bottom of the load temperatures would have ranged from 2.0°F to 15.5°F with an average of 8.2°F.

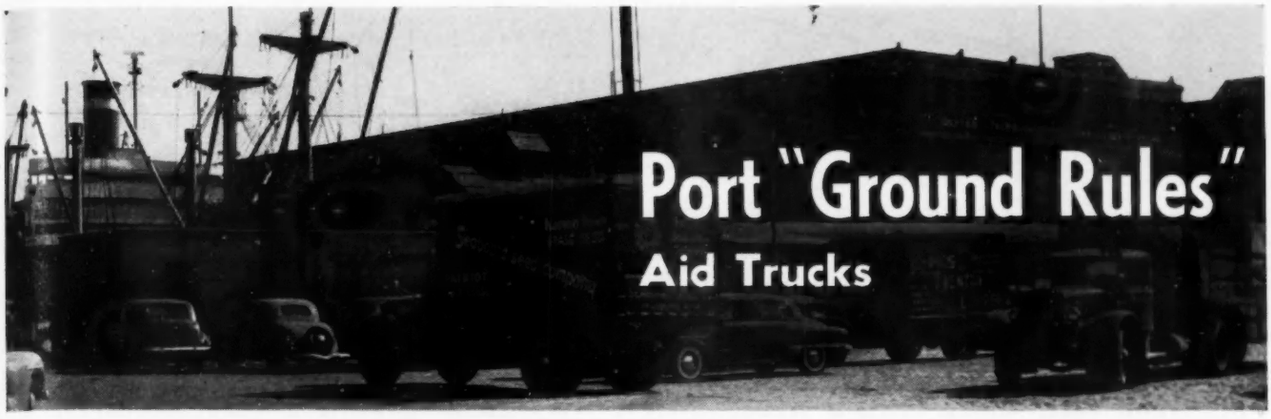
Observations: It was apparent from the temperatures of the load that the air cooled by the dry ice did not flow around and under the load by convection as was expected. This failure might be overcome by making greater provision for positive air circulation around and under the load.

For the most part, the temperature of the cargo during this test was not held within the limits specified by the shipper as being satisfactory for protection of the product.

4. Dry Ice Bunker Refrigerating Equipment.

The precooling and transit tests reported here are part of a series of tests

(TURN TO PAGE 104, PLEASE)



Port "Ground Rules" Aid Trucks

In effect only three months, CCJ finds the new rules are cutting pier waiting time at the Philadelphia docks

NEARLY this month, truck and pier operators at the Port of Philadelphia will meet to evaluate the success of "ground rules" put into effect three months ago to expedite truck handling of waterborne cargo.

The rules, reproduced at right, came about as a result of several complaints received by the Defense Transport Administration as to delays encountered at a number of ports by motor carriers. It selected Philadelphia as the site of a pilot study, asked the local chapter of the Pennsylvania Motor Truck Assn. to see what could be done. A joint committee of the truck association and the Philadelphia Marine Trade Assn., went to work, developed the present regulations.

A preliminary survey made by COMMERCIAL CAR JOURNAL among fleet and pier men using the rules indicates that the biggest problem to be faced is giving the rules greater publicity. Those contacted are enthusiastic about them, say the only drawback is that not everybody has gotten into the act yet.

When asked, larger fleets doing

(TURN TO PAGE 120, PLEASE)

PROCEDURES FOR THE DELIVERY AND RECEIPT OF INWARD, OUTWARD AND WAREHOUSED WATERBORNE CARGO AT PIERS IN THE PORT OF PHILADELPHIA AS AGREED UPON BY THE "JOINT MARITIME-MOTOR TRUCK COMM."

Published Jointly by

Philadelphia Marine Trade Assn.
Bourse Bldg., Philadelphia 6, Pa.

Pennsylvania Motor Truck Assn.
Phila. Chapter, Schaff Bldg., Phila. 2, Pa.

A—*Outward Waterborne Cargo*

1. Shipper or Broker must indicate on hauling order to truckman the name of Steamship Company, ship, pier, and Port of Destination.
2. Truckman must contact Steamship Company's pier office and give name of ship, type and amount of cargo, and Port of Destination. Steamship Company must then advise when cargo should be delivered.
3. Time agreed to by both truckman and Steamship Company must be adhered to as closely as possible.
4. Truckman at time of call must advise Steamship Company whether or not he wishes his truck unloaded at current tariff rates for such service. (Unloading in this case means removing cargo from vehicle and stowing at a point designated by Steamship Company.)
5. If truckman desires to unload the cargo, it shall be his responsibility to "Port" the cargo at place of rest on pier as directed by the Steamship Company Representative.
6. It is recommended that the truckman request the pier to unload all LTL cargo up to 10,000 lbs. in order to avoid delays.
7. Upon arrival at pier driver must produce necessary papers to pier gate and steamship company clerk who will assign a checker as soon as one is available and designate point of unloading on pier.
8. No truckman will be permitted to commence delivery operations at any pier after 4 P.M., *unless* he has reported to pier and Steamship Co. prior to 4 P.M. Monday through Friday, or unless special arrangements have been made between the truck owners and the Steamship Company. If driver is in line prior to 4 P.M. the Steamship Co. must receive the freight.

B—*Inward Waterborne Cargo*

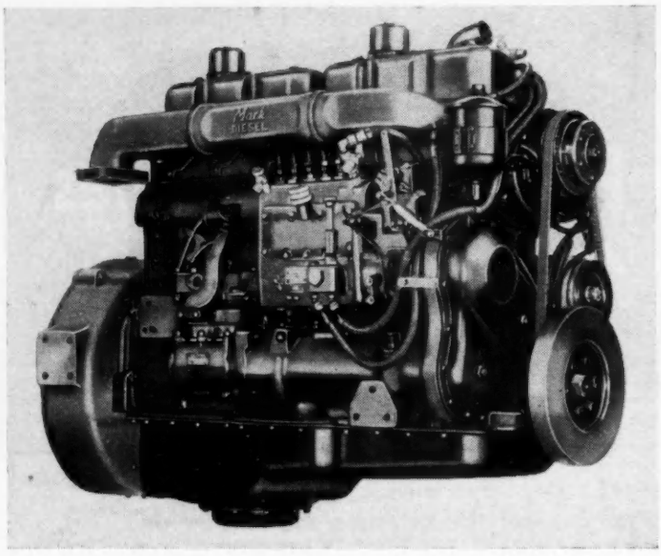
1. It is the responsibility of the broker or consignee or such person employing the truckman to provide adequate information on the delivery or hauling order so as to enable the truckman to identify the shipment to the Steamship Company. Such information to consist of Steamship Company, name of ship, type of cargo, weight, markings, charges paid, etc. They should also give the truckman maximum notice to pick up the cargo so that he does not receive the hauling order on the last day of free time.
2. Upon receiving orders to pick up freight at piers, truckman must first contact the Steamship Company's pier office giving them the name of the ship, type and amount of cargo, broker or consignee, and whatever marks are indicated on their hauling orders. The Steamship Company clerk must then advise whether or not the cargo is available. If known, they will also advise the truckman of any special instruction such as weighing light and heavy. They must also advise the truckman what day they want the cargo picked up and its location on the pier. This date must be adhered to.
3. Truckman, at time of call must advise whether or not he wishes his truck loaded at current tariff rates for such service. (Loading in this case means removing cargo from point of rest on pier and placing it in vehicle.)
4. If truckman desires to load the cargo, it shall be his responsibility to pick up the cargo from the point of rest on the pier.
5. It is recommended that the truckman request the pier to load all LTL cargo up to 10 000 lbs. in order to avoid delays.
6. Upon arrival at pier, driver must produce necessary papers to pier gate and steamship company clerk who will assign a checker as soon as one is available and designate location of cargo on pier.
7. No truckman will be permitted to commence a pickup operation after 4 P.M. Monday through Friday unless he has reported to pier and Steamship Company prior to 4 P.M., or unless special arrangements have been made between the truck owners and Steamship Company. If driver is in line prior to 4 P.M., the Steamship Company must deliver the freight.

C—*Warehoused Waterborne Cargo*

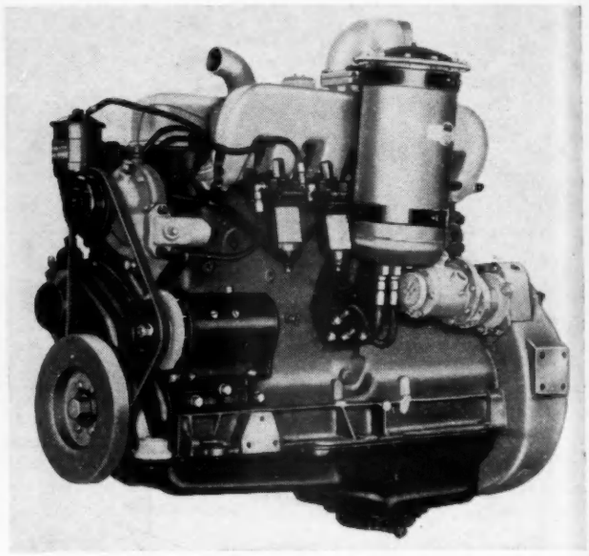
1. Truckman must contact Pier Warehouse Operator and give them name of storer, lot number and quantity to be picked up from storage to enable warehouseman to prepare delivery ticket before arrival of truck.
2. Truckman on arrival at pier will stop at Pier Gate Office and will notify pier clerk that he is there to pick up storage merchandise so truck can immediately be permitted to enter pier.
3. Truckman on instructions will then proceed to pier storage delivery clerk to sign delivery ticket and be given location of merchandise, delivery ticket and gate pass for immediate loading.
4. After receipt of merchandise, truckman will immediately leave pier depositing gate pass given him by pier delivery clerk at Gate Guard Office.

D—*General Instructions*

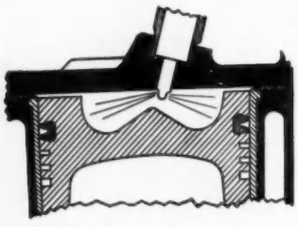
1. It shall be the responsibility of the Steamship Company to have the freight on the piers sorted according to Bill of Lading and to have the cargo covered by one Bill of Lading at one spot on the pier where practicable and to make the freight accessible to the truckman.
2. The Steamship Company must provide sufficient checkers, tally clerks, and labor so as to avoid delays in receiving or delivering freight. It is understood that once the loading or unloading of a truck has started, it will not be interrupted until completed, except for meal hours.
3. If Steamship Company is unable to locate and deliver any part of a shipment, driver must obtain a written memorandum, signed by delivery clerk, that freight is not available and/or accessible.
4. The receiving, or delivery clerk, or gateman will, upon request, sign or stamp form provided by truck owner, indicating time truck arrived at and departed from pier.



View of right side of new diesel engine shows detail of injection pump, compressor and three-piece exhaust manifold



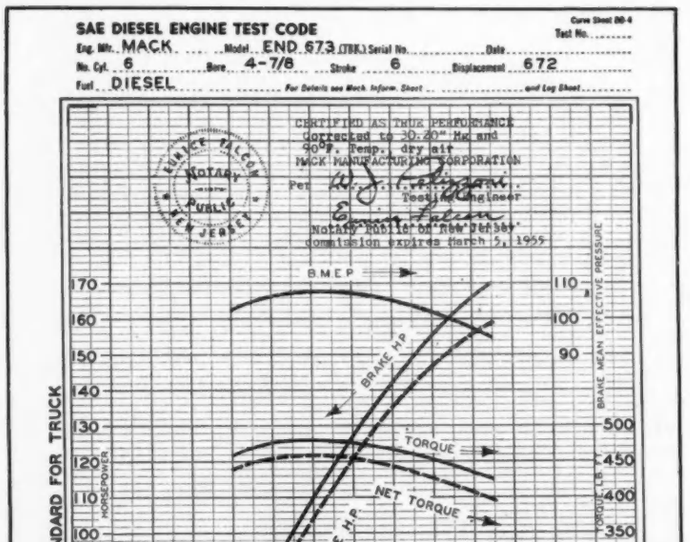
Left side view shows one-piece intake manifold, fuel and oil filters, generator and air starter (optional)



Above. Detail of combustion chamber.

Below. SAE test of new diesel engine

Mack 672 Cu In. Die



MACK TRUCKS, Inc., has announced details of its new diesel engine, the Thermodyne Model No. END-673. Under test for many months, this engine develops 170 bhp at 2100 rpm. Torque output is 480 lb ft, maximum, at 1200 rpm.

The new Thermodyne diesel is offered in Mack truck and tractor models of the LJ series, H series, W series and B-61 series..

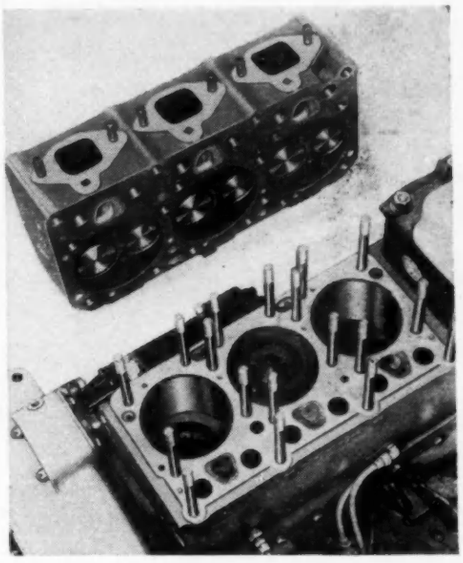
Most outstanding feature of the new engine is its combustion chamber design, which is primarily responsible for its fuel economy. Formed entirely in the piston crown, the combustion chamber is semi-toroidal in shape, with an essentially flat cylinder head surface.

Design of the intake port imparts a tangential direction of flow to the incoming air which results in a swirling movement in the combustion chamber. As the piston head rises, the semi-toroidal shape of the piston crown accelerates the swirling air into a vortex traveling at such tremendous speeds that it literally tears the fuel spray to atoms as the fuel issues from the injection nozzle. Combustion is rapid and complete.

Current Mack Engine Specifications

Engine Designation	Type	Displacement in Cu. In.	Bore	Stroke	Bhp @ Rpm	Ft. Lbs. Torque @ Rpm	Installed in Truck Series
EN 291	LH	290	3¾"	4⅜"	107 @ 2800	232 @ 1400	B-20
EN 331	LH	330	4"	4⅜"	122 @ 2800	264 @ 1400	B-30
EN 401	LH	401	4 1/16"	5 5/32"	150 @ 2800	330 @ 1400	B-42
EN 431A	OV	431	4⅛"	5⅜"	147 @ 2500	350 @ 1400	B-50
EN 464	OV	464	4 7/16"	5"	170 @ 2800	370 @ 1000	B-60, H
EN 707A	OV	707	5"	6"	196 @ 2000	570 @ 1100	L
END 510	OV	510	4 7/16"	5½"	138 @ 2400	368 @ 1400	B-41
END 673	OV	672	4⅞"	6"	170 @ 2100	480 @ 1200	B-61, L, H

Flat cylinder head with specially designed combustion chamber in piston is one reason why . . .



Special design of pistons obtains more complete combustion, reduces heat concentration

Diesel Develops 170 Hp

Injection Nozzle Cooling

IN ADDITION to affording complete combustion, the Thermodyne combustion chamber obtains more efficient injection nozzle cooling. The newly-designed pistons eliminate hot spots by reducing heat concentration in the piston head, while the great compactness of the combustion chamber, with its reduced heat-rejection surfaces, increases engine efficiency. These advantages are said to be particularly evident in the engine's easy-starting characteristics.

To assure adequate starting for different operational requirements, a choice of either electrical or air starting equipment is available with electric standard and air optional.

Other features incorporated in the new Thermodyne diesel are:

Highly-dependable Bosch multiple-unit injection pump, with the drive directly from the timing gears, and rigid flange-mounting.

High-pressure piping connects each plunger-type pump to its four-hole spray-type injection nozzle.

Nozzles are water-jet cooled and can be tested with removed nozzles for spray checking while the engine is running.

Governor Controlled

INJECTION is rack-controlled by a variable-speed hydraulic centrifugal governor, to produce an engine speed corresponding to the position of the accelerator pedal. This is similar to the throttle control of a gasoline engine, except that the governor automatically compensates for variations in load placed on the engine.

In addition to the torque control and speed-droop characteristics, the governor completely shuts off fuel when the engine is drifting. While this results in some fuel saving, it is much more important as a control and safety factor, since it permits full utilization of the retardation, or braking, effect of the high-compression engine.

The Mack "Synchrovance" is also incorporated in the Thermodyne diesel. The "Synchrovance" automatically advances or retards injection timing according to the engine speed to eliminate premature firing at slow speeds.

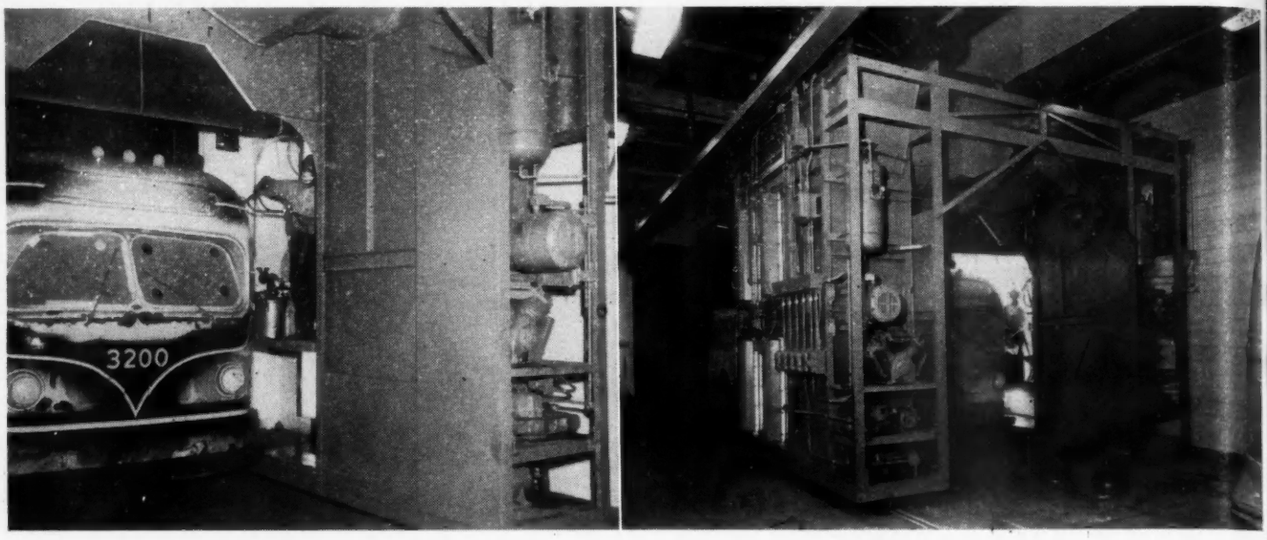
Timing gears of extraordinary durability are five in number, all upset, end-grain drop-forgings, case-hardened with helical teeth, generator ground. In the nearly 40 years they have been used in Mack engines, there is no record of these timing gears ever having worn out in service.

Seven-Bearing Crankshaft

THE seven-bearing crankshaft is fully counter balanced both statically and dynamically with 12 integrally-forged counter-weights. Its journals are induction case-hardened and journal fillets are pre-stressed by roller burnishing to increase surface strength and prolong crankshaft life. Torsional vibration is absorbed by an improved viscous-type damper.

Connecting rods have caps split at a 35-deg. angle to accommodate 3-in. crankpins and still permit withdrawal through the cylinder bores. Mating tongue-and-groove surfaces lock the caps positively and relieve the retaining capscrews from shear.

Building the Thermodyne diesel specifically for installation in Mack vehicles attains a balanced design of engine and chassis.



Left. Equipment sprays heavy mix, permits use of one coat for refinishing. Above. Easily accessible for service, each side of booth is fully equipped

Mobile Spray Booth

Cuts Painting Costs by 1/3

Here's how Cleveland Transit System saves space, time, money painting buses with a mobile booth

By Walter Davis
Superintendent of Equipment
Cleveland Transit System

Mobile booth does the job in less space than stationary painting facilities. Drying lamps follow right along as booth moves length of bus

IN THE last year we have been able to reduce our over-all painting costs by one-third. Considering the fact that we have more than 1200 motor buses and trolley coaches in the Cleveland Transit System fleet, it will be seen that this is a sizable reduction in our operating costs.

Key to the improvement in our vehicle refinishing program is the installation of a Devilbiss mobile spray painting booth. Replacing two stationary units, it permits us to handle a far greater volume of work in a much smaller area and also allows us to adjust schedules to efficiently paint from one to six vehicles per day.

While it is true that the initial cost of the unit was between 10 and 20 per cent higher than for stationary equipment with the same capacity, we feel that this difference will soon be overshadowed by the savings resulting from its use. In addition to the improvements already mentioned, we have been able to use one coat of paint instead of two for refinishing, due to the capacity of the spray

(TURN TO PAGE 117, PLEASE)

Free PUBLICATIONS

FOR YOUR CONVENIENCE USE THE POSTCARD ON NEXT PAGE

L1. Better Roads Data

"Mud and Muddle or Mobility" is the title of a new booklet just released by the National Committee for Project Adequate Roads—PAR. It hits home at a problem of vital interest to fleetmen, local and intercity. Together with a complete kit of information on the progress of PAR to date, it tells how truck users can help in securing the better roads they need, especially at local levels.

The 32-page, letter-size publication takes a look at both the crowded city streets and the thousands of miles of local rural roads that need improvement as well as intercity highways. It describes the problem clearly, takes a look at the future unless something is done.

It also describes what is being done, how PAR operates and how individuals can do the job that must be done.

Truck operators will be especially interested in the description of how one 17-mile stretch of new highway near Washington, D. C., is saving about 311,000 truck and driver hours' annually. It estimates the amount saved in time alone at $2,000,000.

Copies are limited, but they are available to truck and bus fleet operators with a sincere interest in obtaining the adequate roads needed in their business.

For further comment on this important project, see "The Overload" on page 5, then circle L1 on the postcard on the next page for full details.

L2. Tire Recap Guide

"How to Get More Recaps Out of Your Truck Tires" is a brief—8 pages—but informative letter-size booklet giving a complete summary of factors for consideration in tire recapping and in prolonging tire life.

It opens with informative charts on savings in tire mileage costs by effective use of recapping. The three types of tire recapping—top-capping, full recapping and retreading—are illustrated and described.

It then discusses how to care for tires to obtain maximum use both before and after recapping. Included in this section is comment on the importance of timely repairs, the effect of correct inflation on recappability, rules for correct inflation and the importance of correct loading and load distribution.

A section on increasing tire life includes a check list of mechanical defects that shorten tire life, instructions on proper matching of dual tires, a system of rotating tires for longer wear and a check list of driver rules for greater tire life.

To obtain your copy of this booklet, circle L2 on the postcard.

L3. Driver Safety Book

A new traffic safety booklet, "Common Sense Pays Off," has been issued by the Assn. of Casualty and Surety Companies. Fleet safety men will be interested in the logical presentation of the publication—and drivers will be impressed.

Points covered in the publication, in brief, common sense are (1) why safe driving is important to the individual, (2) how speed affects safe driving, (3) safe driving and the right-of-way, (4) observation of traffic rules, (5) defensive driving, (6) dangers of "tavern fog," (7) importance of observing warning signs, (8) vehicle mechanical condition and safety, (9) making right and left turns safely and (10) avoiding close shaves.

Well illustrated with cartoons and charts, this pocket-size, 12-page booklet will do a job toward convincing drivers to drive with common sense. For a sample copy, circle L3 on the postcard on the next page.

L4. Tool Care Guide

Here is a survey of standard practices in lengthening the life of the cutting edges of tools, dies, fixtures and other shop tools. First section is on hand-stoning or honing.

Next discussion is on high surface finishing of high speed steel cutting tools.

Other methods mentioned include carburizing, nitriding and cyaniding.

Copies are available by circling L4 on the postcard on the next page.

L5. Electrode Data

Fleetmen with welding electrode selection problems will be interested in this 64-page, pocket-size electrode guide and catalog. In addition to its handy size, the publication has marginal tabs with the following headings: mild steel, high tensile steels, low hydrogen weld metal, stainless steels, surfacing, nonferrous and cast iron.

First section in the book is a discussion on how to pick the right welding electrode and the basis for the American Welding Society and American Society for Testing Materials specifications. A two-page handy chart gives the various AWS-ASTM numbers and the principal characteristics of each.

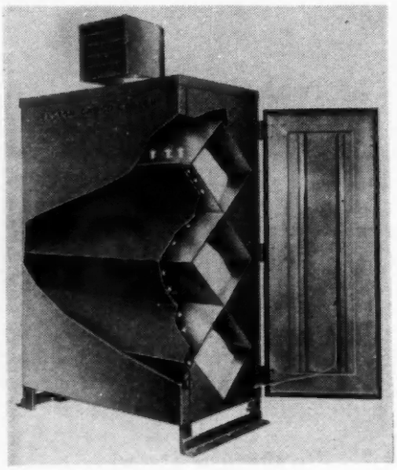
Most of the pages are a description of various welding electrodes and their uses under the headings as listed above. Descriptions include reference to the AWS-ASTM numbers, methods of using the electrode and the various applications the electrodes are recommended for.

In the back of the book are two comparison charts. The first chart gives the different manufacturers numbers for comparable stainless steel electrodes. On the back of this chart is a similar one comparing mild steel and alloy electrodes.

Circle L5 on the postcard for your copy.

NEW Products

ADDITIONAL DETAILS AVAILABLE UPON REQUEST VIA POSTCARD

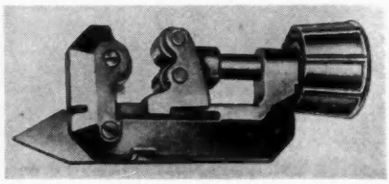


P1. Cargo Coolers

A new line of cargo coolers for truck and semi-trailer installation has been announced by Rue R. Elston Co., St. Paul, Minn. Using dry ice as a cooling source, the units feature a special design to increase cooling capacity by exposing four surfaces of the dry ice blocks to air flow. Amount of dry ice used with the equipment depends on the thickness of truck insulation and the outside temperature. The Model No. M-300, designed for truck bodies 18 ft or under, is 20 in. wide, 26 in. long, 56 in. high and weighs 325 lb. It has a capacity of six blocks of dry ice, or approximately 300 lb. The Model No. M-450 is engineered for trailer bodies and has a dry ice capacity of approximately 450 lb. or nine blocks. Width is 20 in., length 28 in., height 56 in., weight is 400 lb.

P2. Welding Electrode

Air Reduction, New York City, just announced the availability of a new, improved E6010 electrode, the Airco 78E, for welding mild steel in all positions. The 78E is recommended for the fabrication of mild steel involving plate and rolled sections or castings.



P3. Tube Cutter

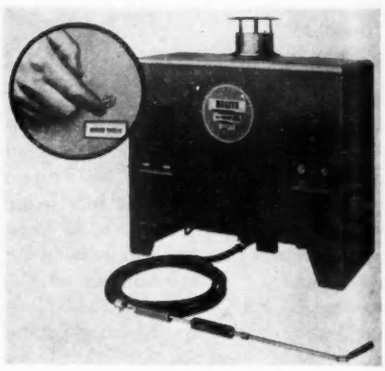
A redesigned tube cutter is now being marketed by National Machine and Tool Co., Jackson, Mich. The pressure rollers operate on a sliding feed mechanism and the fixed cutter wheel is mounted on a wide axis to obtain better alignment and eliminate threading. The reamer knife is retractable. Weighing only 7½ oz, the unit has an enclosed feed so its overall length is 4½ in. with the reamer closed. This permits the cutter to be used in tight places without removing the tubing to be cut.

P4. Wax Polish

Garry Laboratories, Inc., Buffalo, N. Y., announces a new wax coat auto polish. It was developed to combine the best properties of Carnauba, synthetic waxes and plasticizers with the brilliance of silicones. It has been tested in spray booths using a salt spray solution, as well as under various road and weather conditions.

P5. Diesel Engine

Hallett Mfg. Co., Inglewood, Cal., is currently in production on a new 2-cyl, air-cooled diesel engine designated as the Model No. AC-2. Features include: 2-cyl, 4-stroke cycle, air cooled with integral flywheel; 13 hp, continuous load and 14 hp, intermittent speed; 3½-in. bore and 3¾-in. stroke; 36.07 cu in. displacement per cyl.



P6. Steam Cleaner

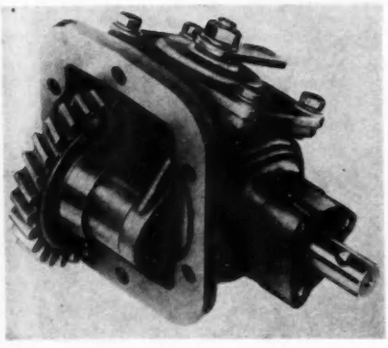
Automatic firing is the major development in a newly designed high volume steam cleaner now being manufactured by Kelite Products, Inc., Los Angeles, Cal. Turning on two electric control switches places the machine in operation. One controls a specially designed automotive piston-type pump, while the second ignites an automatic oil burner. The burner uses a wide range of fuels, from gasoline to number two diesel fuel without changing orifices or burner parts. Another feature results in fuel savings by trapping radiated burner heat to raise the water temperature 50 deg. before it enters the heating coil. Other automatic controls turn off the burner if water supply fails, and prevent the burner from being fired unless pump is in operation. It has a capacity of 150 gph. The machine measures approximately 55 in. long, 27 in. wide, 48 in. high, and weighs 825 lb.

P7. Air Horns

Western Products, Culver City, Cal., announces its new line of "General" air horns. Formed of spun brass and fitted with large-diameter bronze alloy diaphragms, they are chrome plated with all mounting screws concealed. Operating on compressed air, butane or propane.

The latest developments in parts, accessories, equipment and tools for the fleet shop

CIRCLE APPROPRIATE NUMBERS ON POSTCARD FOR MORE INFORMATION

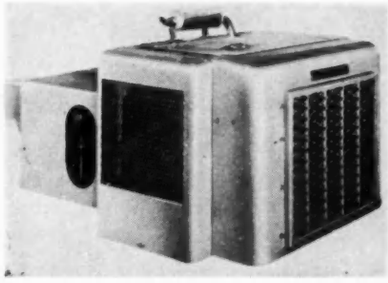


P8. Power Take Off

Chelsea Products, Inc., Chelsea, Mich., announces their new model No. 15 HF power take off especially designed for the new 5-speed extra heavy duty '53 Ford trucks. Elimination of an adapter gives simpler right hand side mounting. The unit weighs 20½ lb with a malleable iron housing. Idler gear is mounted on needle roller bearings. Bronze or needle bearings on output shaft depends on the requirements of the individual. Output gear floats in mesh. Helical gears for quiet operation. Either wire control or lever control shifting can be had. Speed is 53 per cent opposite with direct transmission and 66 per cent opposite with overdrive transmission. The 15 HF is available with shaft sizes of ¾, 13/16, ⅞. 15/16 and 1 in. 25 hp rating at 1000 rpm.

P9. Power Sander

A new orbit sander for finishing wood and metal surfaces is announced by Mall Tool Co., Chicago. It is designed to work equally well on flat, curved, horizontal or vertical surfaces. Of aluminum alloy construction, it weighs 5 lb. A full-grip, trigger switch handle and front knob contribute to quick and easy maneuverability. The sander has ¼-in. orbital motion operating at 4500 cycles per minute, runs on standard 115 volt AC-DC.

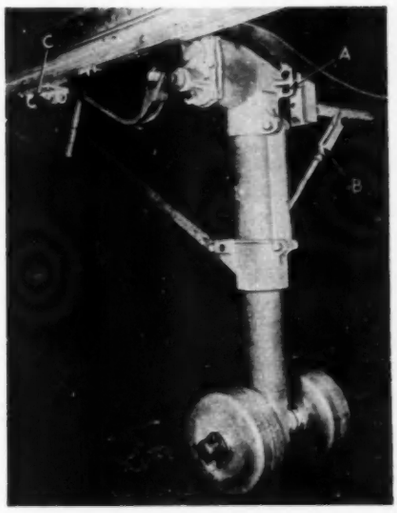


P10. Refrigeration Unit

U. S. Thermo Control Co., Minneapolis, Minn., has announced the addition of its new "North Star" series refrigeration units. Featured model in the new series is the versatile "North Star" No. M 20 which operates on both gas engine and electric motor. When the truck is on the road the unit operates under gas power. When at the dock, the unit may be plugged into electric current. It is said to have 40 per cent more refrigerating capacity than previous comparable models. Other units in the "North Star" series are the No. M-10 which operates only on gas engine and the No. M-40 which is powered by electric motor.

P11. Welding Torch

Continuous heavy - duty inert gas arc welding at 500 amp is possible with the new water-cooled "Heliarc" HW - 12 torch. Currents of all types can be used to weld practically all commercial metals. It also can be used for hard-facing operations. It was developed by Linde Air Products Co., New York City. It has an improved water-cooling system that allows uninterrupted service at the full-rated capacity of 500 amp without overheating. External "plumbing" has been eliminated to prevent leakage.



P12. Trailer Supports

Fruehauf Trailer Co., Detroit, vertical trailer supports now have an adjustment on the support legs which regulates overall length to accommodate various tire sizes. Previously the vertical supports were made to suit the specified tire size. On the new unit adjustments can be made very simply by removing the bolts, A, B, and C, locating the upper bracket assembly which supports the upper end of the support sleeve and moving it up or down as desired.

P13. Hydraulic Motors

Vickers Inc., Detroit, announces production of two new sizes of vane motors, Series M2-300 and M2-400. They feature automatic pressure loading, automatic adjustment of both radial and axial clearances, maintenance of a lubricating oil film on both rotor faces and vanes, and compact and lightweight construction. Mounting adaptability is provided by four combinations. Series M2-300 motors are available in 7.7, 10.2 and 12.8 hp output sizes, and Series M2-400 in 16.6 and 21.6 hp sizes.

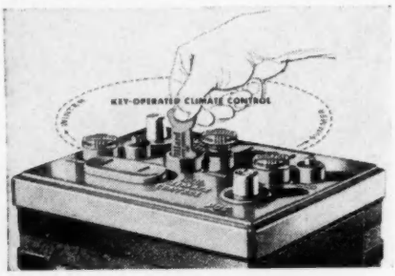
(TURN TO NEXT PAGE)

New Product Decriptions

Continued from Page 91

P14. Weatherized Battery

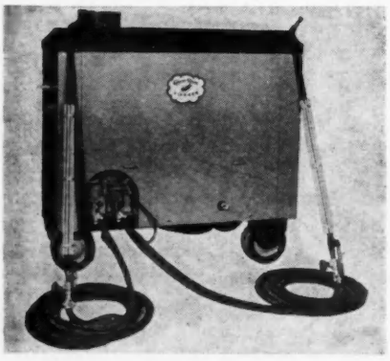
Willard Storage Battery Co., Philadelphia, has announced a new "Weathermaster" battery with a patented "Climate Control" feature to automatically adjust battery power output to meet diverse demands of Summer and Winter conditions. It is also capable of cold cranking nearly five min at 300 amp at zero deg F. The "Climate Control" adjustment is made



with a simple, manually-operated "key" which is inserted successively into each of the battery cells, then turned to the proper seasonal setting indicated on the battery top. The adjustment regulates the battery's water capacity, increasing it for Summer use, decreasing it for Winter service. A greater water capacity for Summer driving lowers the battery's acid gravity, promoting longer life through less acid deterioration. A reduced Winter water capacity provides a high acid gravity at top charge, hence a stronger electrolyte. Greater power and top cranking ability at hard-to-start Winter temperatures are resulting benefits.

P15. Steam Cleaner

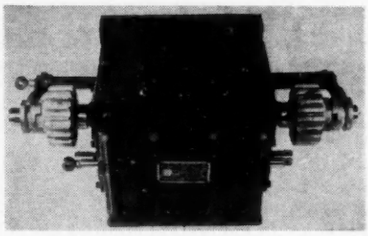
Quick Charge, Inc., Oklahoma City, Okla., has just put on the market this new steam cleaner, large enough to



operate two steam-guns. It will deliver 200 gal of combined saturated steam and cleaning detergent per hr with force of 130 lb pressure.

P16. Winch Transmissions

Tel-E-Lect Products, Inc., Minneapolis, Minn., has announced three new rapid forward and reverse transmis-



sions for winches, Model No. 400 for use with single drum winches, No. 450 for double drum winches and No. 450FS for two separate winches. Powered by the truck transmission through an SAE power take-off, the new units supply power without shifting the power take-off or using the truck's clutch.

P17. Seat Repair Kits

W. L. Webster Mfg., Detroit, has available truck seat repair kits for convenient rebuilding of most truck seats. While parts of the kit may be had separately, the complete renovation kit includes new springs, new pads, repairs for broken border wire and braces and new covers for seat cushion and back. Tacks, hog rings and hog ring pliers are included in the kit.

P18. Truck Stand

Newest car and truck stands recently developed by Lempco Automotive, Cleveland, Ohio, are light enough to be employed on passenger cars yet exceed truck and trailer requirements, having withstood test loads of 29 tons before failure, although rated at 10 tons. They

employ a hollow steel tube loaded with steel slugs. When the inner cylinder is lifted the slugs drop through an opening in the bottom of the tube, forming a solid base and thus support the stand in any extended position up to 19 in. on the short passenger model stand and 24 in. on the long truck model stand.

P19. Thermatic Fan Drive

Schwitzer-Cummins Co., Indianapolis, Ind., has announced a thermostatically controlled fan drive for heavy duty engines designed to maintain the

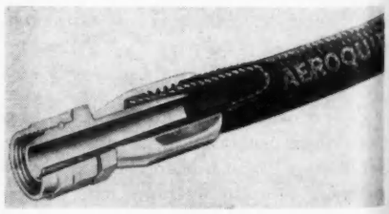
coolant temperature at the most efficient level. A multiple disc clutch, operated by hydraulic or pneumatic pressure, regulated by a thermostatic control valve, automatically disengages the fan when cooling is not required.

P20. Bug Remover

A cleaning powder for removing "bug splatter" from vehicle finishes and chromium, containing the detergent "Duponol" fatty alcohol sulfate, is being introduced by the Du Pont Co.,

P21. Hose Lines

Aeroquip Corp., Jackson, Mich., is now producing hose lines which can be connected to so-called Ermeto and



Ferulok type flareless tube systems. The new lines are made up with Aeroquip detachable, reusable fittings, except that the hose-fitting nipple mates with Ermeto or Ferulok tube connectors without the need for ferrules or inserts.

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Since 1915, Manufacturers of: *One-Piece* Tubular and Square Commercial Trailer Axles, Heavy-Duty Front Axles for Trucks, Busses, and Off-Highway Equipment, Low-Bed Machinery Trailer Axles, Heavy-Duty Vacuum and Air Brakes, Miscellaneous Forgings.

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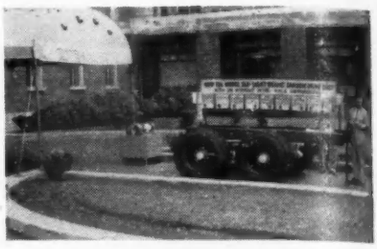
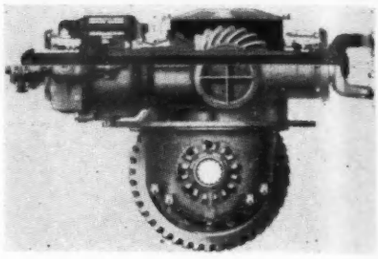
Timken New Light-Weight Tandem Axle With Inter-Axle Differential





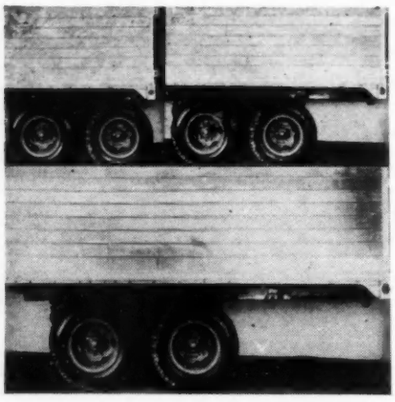
TIMKEN-DETROIT Axle Co., Detroit, introduced a new light-weight tandem-drive unit at the SAE Summer Meeting in Atlantic City. Its principal features include an inter-axle differential with cab-controlled lock out and complete freedom from lubrication. The latter is accomplished by means of slip end springs and a rubber-bushed pivot.

The differential provides for straight line, divided drive with no offset propellor shafts. Spur rather than bevel gears are used, though the principal is the same. Each pair of spur pinions (mounted to mesh in pairs) acts as a continuous balance lever between the two differential gears—each of which is attached to a shaft.

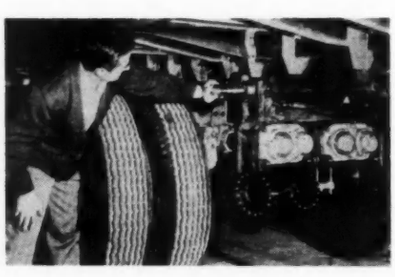
Fruehauf Designs Trailer With Changeable Axle Positions

A TRAILER leasing company recently had Fruehauf Trailer Co., Detroit, design a trailer with variable axle spacing so they could be adjusted to the varying state requirements where the trailers would be rented for service.

A solution was worked out to this problem by the design of a unit which not only had a variable axle position but also an adjustable range of positions provided by a movable king pin. The illustration shows the three possible locations of the tandem rear axle which can be provided with this arrangement.



Re-locating the axle position is accomplished in a fairly simple manner. Disconnecting the air lines automatically sets the brakes. The axle is held in position by tapered screw locking pins as shown. These are withdrawn from their respective stops freeing the axle from the trailer chassis to the extent of permitting it to slide to a new position on the chassis frame. By means of the tractor unit the trailer body is drawn forward or back along the underconstruction, which is held stationary by the brakes, until it is in the desired position. Then the stop pins are replaced to hold the underconstruction firmly in place. With this done and the air lines replaced, the trailer is ready for operation.

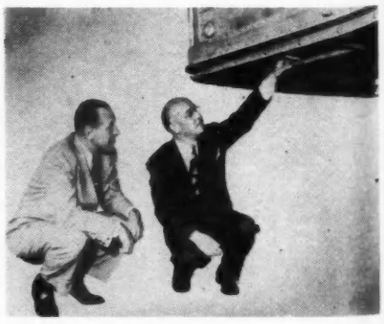


There are times, however, when an adjustment is also required to the king pin location. This can be accomplished by releasing a spring-loaded plunger controlling the king pin position. The steps are as follows:

Trailer is to be coupled to tractor and lower coupler engaged when moving king pin on trailer.

If king pin is in front position and is to be moved to rear position, move locking handle (located under roadside front of body) from front position in T-Slot. Move tractor backward with trailer brakes set until king pin stops at rear position and plunger has automatically locked at this position (pull tractor with trailer brakes set, to be sure plunger has locked king pin in place).

If king pin is in rear position and is to be moved to front position, move locking handle (located under roadside front of body) from rear position in T-Slot. To place king pin in front position in T-Slot move tractor forward, with trailer brakes set, until king pin stops at front position and plunger has automatically locked at this position. (Back tractor, with trailer brakes set, to be sure plunger has locked king pin in place).



Fruehauf engineers emphasize the fact that this is not a production item but does give a very typical example of what can be done to meet extreme conditions. In this instance since the truck-trailers were the property of a truck leasing company it was impossible for them to determine in advance in just what state the operation of the vehicle would take place.

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If you are having trouble with engine parts—if you need a better, more dependable supplier for a *complete* line of both piston pins and cylinder sleeves, just write or call *Special Products Division,* Thompson Products, Inc., 2196 Clarkwood, Cleveland 3, Ohio.

Hard and Soft, Heavy-duty Cylinder Sleeves

You can count on

Thompson Products

SPECIAL PRODUCTS DIVISION

Plastic Liner Cuts Reefer Trailer Weight

Delivered models, designed for zero temperatures, are all plastic inside except the floor, weigh 13,140 lb

REFRIGERATED semi-trailers featuring complete plastic lining except for the floor have been announced by Strick Co., Philadelphia. Plastic corrugated sheets are used for the sides, flat plastic sheets for the ceiling and a one-piece, molded plastic door pan are used instead of the conventional plywood.

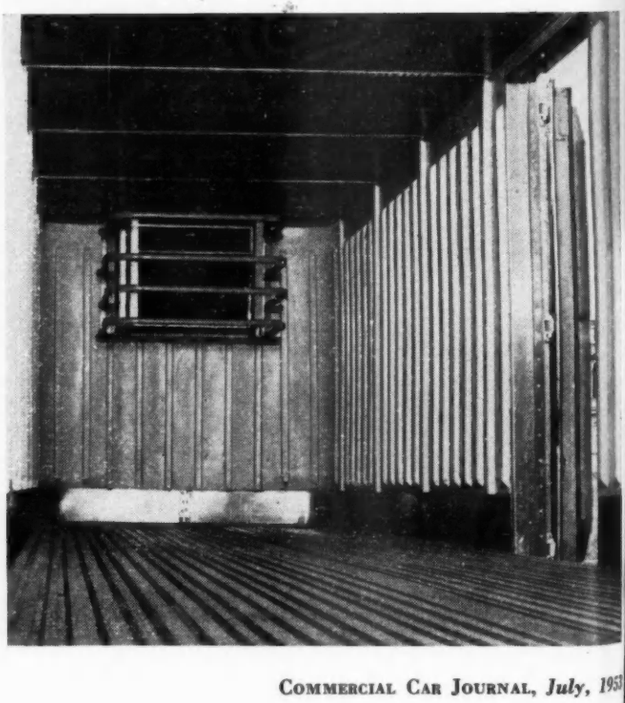
Although weight of the unit varies with construction, insulation and refrigerating equipment, models of the new trailer delivered to Needham's Motor Service, Inc., Philadelphia, New York City, Atlantic City carrier, weigh about 13,140 lb. These have a tandem-axle, mechanical reefer unit, and six inches of insulation in the roof and sides and three inches in the floor.

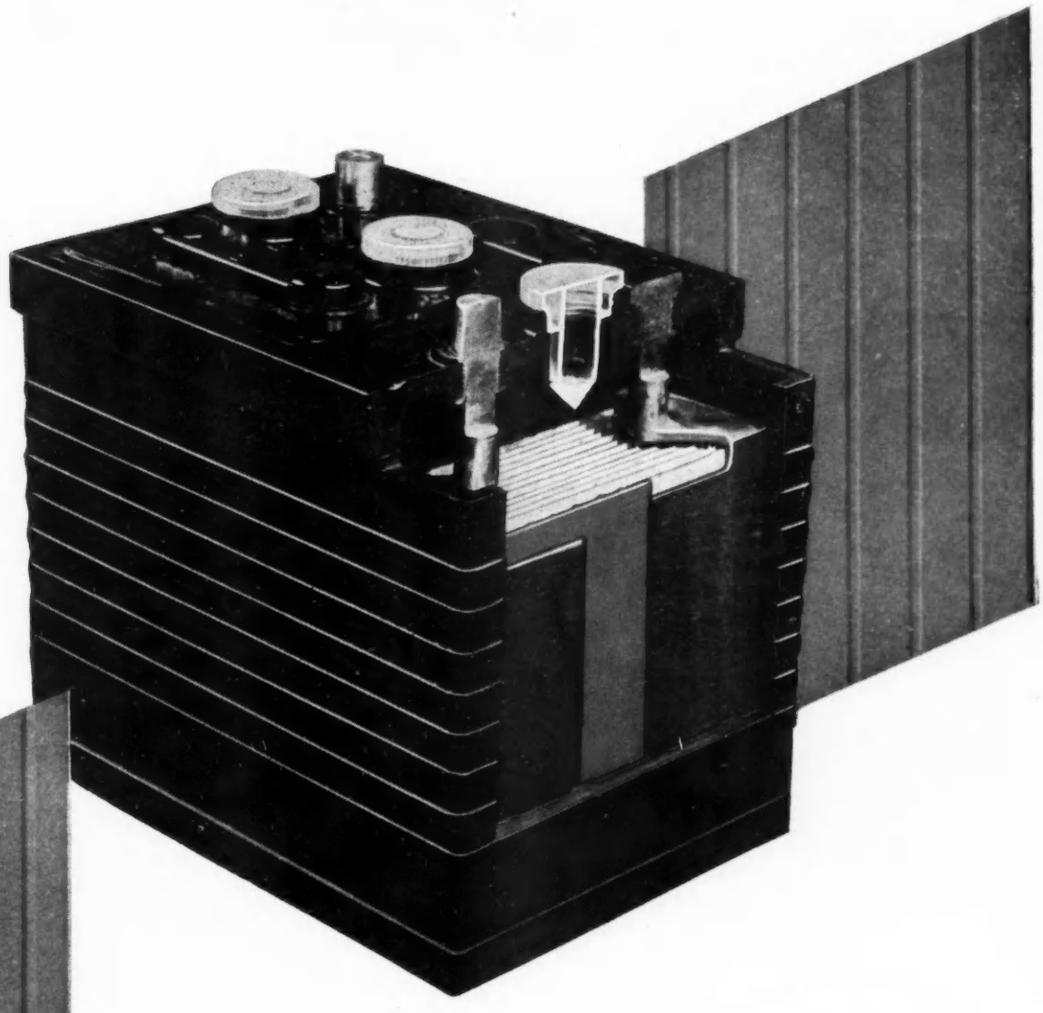
They give a weight saving of slightly over 1000 lb when compared to Needham's present aluminum, single-

(TURN TO PAGE 130, PLEASE)

For permanent, accurate fit, one-piece, molded plastic door liner is said not to warp, shrink or swell

Interior view shows fiber glass, laminated plastic panels in place. Tank-type floor keeps water out of insulation





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Higher porosity allows faster circulation of acid, permits up to 20% faster cranking speed.

Unaffected by overcharging, heat, battery acid or plate pressures.

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More mileage per battery dollar. Cost per month is far less for Peerless-insulated batteries than for batteries insulated with ordinary separators.

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From left: Henry Jennings, Howard Willet, H. G. Steigerwalt, Emil Gohn, Robert Gardner, Willard Lord and T. L. Preble

Good Fleet Executives
Are Made—Not Born

SAE Panel at Summer Meeting outlines some imposing requirements for the top-dog position

THE EDUCATION, development and future of the motor transportation executive is a pretty encompassing title for any speaker, but the SAE panel at Atlantic City last month took on the subject with no holds barred.

The speakers outlined the perfect transportative executive as a man with engineering training or education, a man with ability to handle people, a man with vision who is industrious, understanding and accurate. He must be, the panel decided, a business man, a politician, an educator, a human relations expert as well as an engineer. The group lamented the fact that there are presently no standards for job evaluation for the successful transport executive, and they agreed that to date there is no facility for training new personnel. It does appear that the good supervisor is a self-made man.

Along these lines, however, it was mentioned that there is a project under consideration for providing training in the high school for future transportation personnel. The Pennsylvania Motor Truck Association has set up a committee headed by George Bunn to investigate the possibility of cooperating with the state's high schools in making transportation courses available to individuals interested in driving, mechanics and executive work. Another solution to the problem of selecting this transportation executive came from a representative of American Trucking Associations, Inc., who said that ATA is investigating the possibility of backing public education courses at secondary education levels.

A Look At Transmissions

TORQUE converter type transmissions offer certain advantages in off-highway use which may well be enjoyed once they are applied to medium or heavy-duty trucks, according to P. L. Gillman and W. S. Coleman, of The White Motor Co. It was suggested in a paper on the subject that converter transmissions offer 1. smooth starting, 2. variable torque under conditions where conventional gear shifting is difficult, 3. downhill braking, 4. increased payload per unit of time, 5. reduced engine and drive line abuse with consequent decrease in maintenance.

The speaker said, however, that the operator will generally have to put up with higher initial cost of equipment, higher fuel consumption and special training of maintenance personnel.

It was generally agreed that the advantages outweigh the disadvantages in certain types of operation. The person to gain most, of course, is the truck driver, since his job is made much easier.

W. W. Edwards, of GMC Truck & Coach Div., said that the Hydra-Matic type transmission as is now available on ½-ton and ¾-ton vehicles, can be used (with adaptations) for transmitting horsepower ranging from 90 to 210. From the standpoint of horsepower and torque capacity, the possibility of using this unit for

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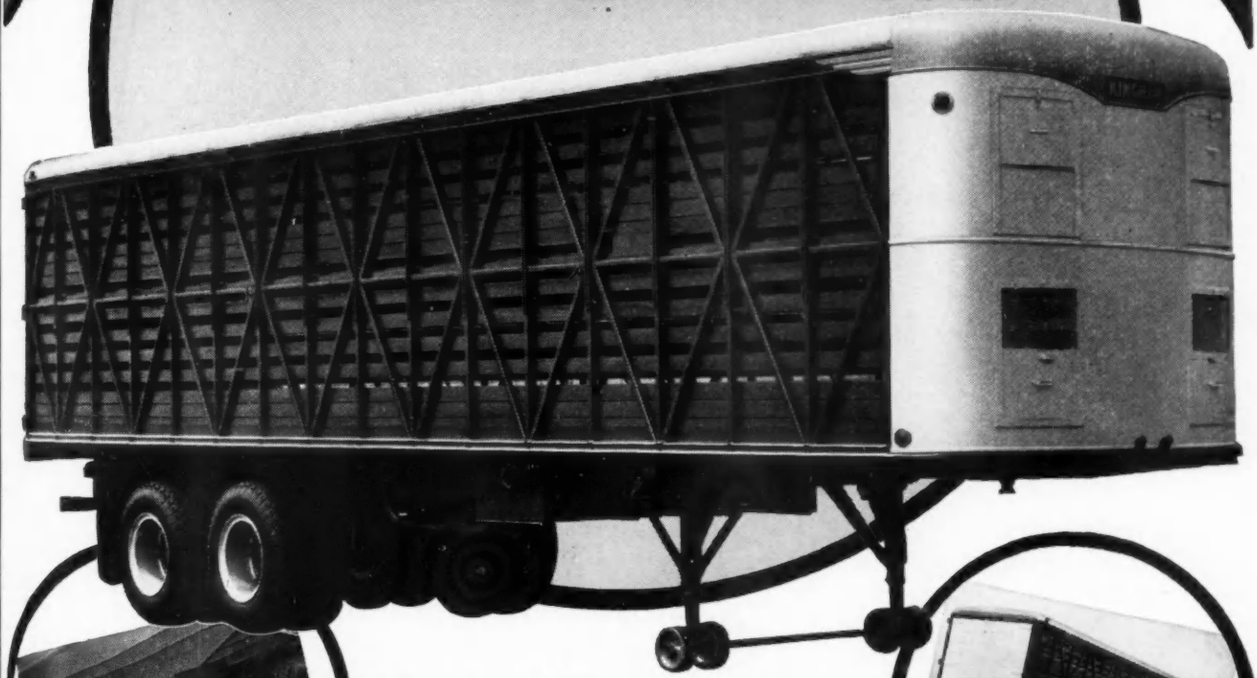
A BULLSEYE VIEW of the New Kingham UNIVERSAL LIVESTOCK VAN



Trim sturdy 3 point undercarriage

- Lightweight frameless construction
- Diamond tubular welded sides
- Double deck rail — Heavy duty steel
- Full Van doors rear — double pressure locks (left door opens first)
- Ventilators Front — Std. Equipment
- Panel slides for side enclosures (with panel carrier box)
- I. C. C. Bumpers
- Uni-weld construction
- Crossmembers 16" centers
- 2" Fir floor
- Reinforced upright posts
- 14 ga. steel liners front & rear
- 12" straw boards with beveled oak slats on 2½" ctrs.

Optional rear gate construction

Clean cut for stock protection

Wide frame supports

You hit the Bullseye when you buy Kingham

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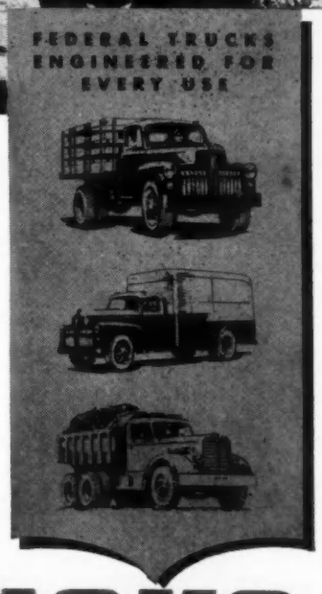
1953 New Truck Registrations by Makes by States*

STATE AND MONTH		Auto-car	Brock-way	Chev-rolet	Dia-mond T	Divco	Dodge	Fed-eral	Ford	FWD	GMC	Inter-na-tional	Ken-worth	Mack	Peter-bilt	Pon-tiac	Reo	Stude-baker	White	Willys	All Others	Total
Alabama	April	3		707	2	1	167		517		204	117		11			6	34	22	17		1,809
	4 Mos.	12	1	2943	9	3	669	7	1580		737	448		61			20	170	75	84		6,890
Arizona	April			320		2	93		199		100	88	4	4			1	38	12	18		877
	4 Mos.			850	4	3	245		552		288	256	10	22			19	97	26	59		2,429
Arkansas	April			656			121	1	484		209	106					2	55	6	19		1,659
	4 Mos.			2759	2		528	3	1804		922	551		1			9	218	28	81		6,906
California	April	16	2	2645	32	16	782		1799	1	771	571	21	36		1	26	253	50	174	16	7,212
	4 Mos.	54	2	8896	116	67	3243	2	5116	5	2817	2346	80	88	10	17	88	799	159	739	60	24,706
Colorado	April			372	5	4	67		252		81	130	2	2			1	24	11	41		992
	4 Mos.	13		1415	48	10	306	5	950	9	429	502	6	10	6		13	129	16	155		4,026
Connecticut	April	1	3	211	6	3	92	2	186		54	84	1	16		1	6	23	37	13	2	703
	4 Mos.	6	16	823	26	30	306	15	564		205	270	1	49		1	25	86	107	81	3	2,616
Delaware	April	1		133	1		38		80		27	37		2			2	8	1	1		331
	4 Mos.	2	2	405	1		99	5	212		66	108		8			8	31	4	10		961
Dist. of Columbia	April			88	1	3	219		47		58	38		1			2		2	4		401
	4 Mos.	3		293	13	13	271	1	165		131	84		8		1	11	3	4	10		1,011
Florida	April	3		744	6	5	190	2	527		163	161		49			11	81	25	33	1	2,001
	4 Mos.	12		2994	24	21	917	9	1907		782	739		150		2	52	403	101	250	10	8,373
Georgia	April	2		534	3	1	138		291		159	132		6			4	51	19	9		1,340
	4 Mos.	5	1	2588	11	6	717		1426		770	623		41		2	14	269	74	56	1	6,604
Idaho	April			218	3	1	63	1	137		78	111	4	4	6	1		29		24	4	684
	4 Mos.			856	10	2	257	1	590	1	359	433	14	28	7	2		106	7	180	6	2,859
Illinois	April	2		1614	48	13	454	1	1172		388	750		19		1	21	118	102	49	19	4,771
	4 Mos.	12		5814	155	42	1861	4	3854	1	1267	2414		65		10	51	472	255	256	43	16,576
Indiana	April	2		748	10	6	231		414		190	334		4		2	11	95	44	52	2	2,145
	4 Mos.	6		2612	31	24	874	3	1588	1	680	1210		32		2	37	366	183	135	13	7,795
Iowa	April	1		711	7	6	122		593		126	322	1	1			8	49	6	21	2	1,976
	4 Mos.	2		2462	28	10	512	1	1870	6	458	1273	3	17		3	20	191	67	84	15	7,022
Kansas	April			638	7	2	151		491		204	300		3			1	57	16	29		2,096
	4 Mos.	1		2382	13	6	459		1485		653	912		3		2	6	178	55	115	2	6,272
Kentucky	April			616	1	1	114	1	405		140	134		2		3	2	41	4	35		1,499
	4 Mos.	1		2450	7	7	492	8	1324		596	634		21		5	14	179	32	157		5,927
Louisiana	April			753	5	4	151		508		189	176		6			4	66	8	26		1,896
	4 Mos.	7		2693	11	8	597	1	1711		712	729		25		2	5	288	26	101	1	6,917
Maine	April	3	1	235	8	1	76		178		61	78		6		1	2	29	6	33		715
	4 Mos.	5	3	626	12	5	201		460	1	232	214		31		2	8	91	13	84	6	1,994
Maryland	April		7	524	1	2	219	2	357	1	123	165		39			10	34	31	17		1,532
	4 Mos.	5	26	1328	3	12	607	5	885	2	294	392		68			18	91	74	58	1	3,998
Massachusetts	April	6	5	432	12	17	155	1	343	1	103	118		35		1	14	60	35	23		1,361
	4 Mos.	37	32	1249	25	41	451	10	832	1	284	349		99		6	40	161	83	113	4	3,807
Michigan	April	11	1	1411	9	15	424	6	1064		275	286		11		1	22	54	28	29	1	3,838
	4 Mos.	17	1	5085	52	66	1721	70	3276	1	1143	952		35		6	89	212	101	148	6	12,975
Minnesota	April			740	4	7	214	11	579	4	167	258		7			10	57	16	14	1	2,088
	4 Mos.			2320	19	12	620	13	1706	13	449	913		10		4	28	181	35	109	2	6,434
Mississippi	April			618			113		378		198	125		3				29	5	21		1,490
	4 Mos.			2391	1		446		1424		803	574		7		1	1	175	15	66		5,904
Missouri	April	2		2038	7	7	411		1166		524	514		5			12	128	47	50		4,911
	4 Mos.	4		3869	13	12	875		2287		1074	943		16		1	27	266	107	100	1	9,395
Montana	April	1		334	1	1	47	1	217		74	124	5	2			3	30	6	55		901
	4 Mos.	1		895	2	1	167	1	668	2	218	406	15	11			7	98	17	183	6	2,698
Nebraska	April	4		463	8	3	80		398		115	171	4	6			3	40	14	37	1	1,347
	4 Mos.	11		1743	36	5	282		1260	3	426	613	11	14		3	5	145	44	174	10	4,965
Nevada	April			43			29		32		28	20		1				19		7		177
	4 Mos.			229			106		145		100	62	1	2				50	2	37		725
New Hampshire	April			104	1	3	27		58		32	23		3		1	3	13		12		269
	4 Mos.	1	4	307	1	3	80		178		76	77		23		2	9	35	5	51		832
New Jersey	April	5	29	742	13	11	207	8	644	1	183	219		29		3	12	63	38	24		2,231
	4 Mos.	29	93	2653	29	52	758	30	2024	5	719	745		114		7	33	180	224	110	3	7,896
New Mexico	April			299	1		48		130		92	51	4	15			7	26	8	21		702
	4 Mos.			629	1		121		332		183	130	4	23			8	63	14	50	1	1,559
New York	April	44	76	1279	33	14	538	11	1081	1	345	467		92		1	33	74	94	136	8	4,347
	4 Mos.	88	287	4826	91	39	2166	28	3267	9	1285	1681		306		12	142	299	280	408	55	15,269
North Carolina	April	3		844		9	178		614		249	185		45			6	54	54	32		2,273
	4 Mos.	11		3267	8	22	755	1	2049	1	911	842		120		5	12	298	174	142	5	8,823
North Dakota	April			155	1		36		199		41	119						15	1	9	2	578
	4 Mos.	1		557	1		151		661		137	446		5			1	59	5	31	2	2,057
Ohio	April	8	3	1323	15	13	427	2	959	2	272	568		50		4	40	103	88	56	6	3,941
	4 Mos.	47	6	4868	54	60	1885	41	3157	7	1023	1930		123		9	123	370	396	233	15	14,347
Oklahoma	April			796	3	1	123		513	2	250	203	1	1			2	45	13	17		1,970
	4 Mos.	3		2985	3	9	542		1894	12	830	821	3	12			16	212	73	72		7,487
Oregon	April	2		359	9	4	178		372		152	177	10	20	14	1	8	27	22	84		1,439
	4 Mos.	10		1317	31	8	484	1	1153	2	482	620	40	37	29	3	21	109	55	309	5	4,710
Pennsylvania	April	16	39	1520	22	5	567	8	1004	1	318	619		57		8	35	88	85	82	6	4,560
	4 Mos.	62	190	4812	62	42	1995	27	3102	1	1068	1942		224		9	106	314	284	364	11	14,615
Rhode Island	April	11	1	81		3	37		80		8	19		5				17	5			267
	4 Mos.	19	2	257	7	7	112		205	4	46	71		14			8	31	12	11		809
South Carolina	April	1		429			67		256		91	49		4		1		33	4	10		945
	4 Mos.	1		1784	2	1	344		1002		394	285		11		2		133	27	39	3	4,026
South Dakota	April			128	2		34		104		41	72						9		16		406
	4 Mos.			578	5	1	164	1	450		159	397	1			3	1	69	8	100		1,937
Tennessee	April	1		1083	6		252		657		304	258		21			6	80	36	35		2,739
	4 Mos.	1	6	3304	12	5	860	16	1874		864	810		47		1	19	217	68	94		8,199
Texas	April	14		2641	5	4	447	2	1742	1	534	646	1	18		1	18	192	123	27		6,418
	4 Mos.	46		10782	54	11	1939	11	6808	3	2407	2430	9	86		11	53	791	410	291	7	26,140
Utah	April			171	1		30		109	1	44	48		2			3	6	1	18		434
	4 Mos.	1		552	11		121	2	433	3	170	218	6	12	3		9	34	13	77	2	1,667
Vermont	April			75	1		32	1	34		25	28		1			2	7	2	29	2	239
	4 Mos.		3	249	3		99	1	112	1	89	103		6			7	28	2	95	5	803
Virginia	April	2	2	675		7	177		450		191	184		18		2	12	58	40	30		1,848
	4 Mos.	9	5	1938		14	660	3	1049		541	488		63		2	36	192	94	104	3	5,281
Washington	April	1		636	9		226		441		251	283	35	37	5	1	14	42	40	98	4	2,123
	4 Mos.	1		1385	10	7	500		1032		544	590	55	48	5	2	23	91	84	170	9	4,544
West Virginia	April	1		293	2	3	106		233		113	76		4		1		19	6	41		896
	4 Mos.	1		1105	3	14	366	4	789		316	285		28		2	3	72	30	174		3,189
Wisconsin	April	1		594	1	3	157		350	2	103	212	1	5			11	42	10	30	2	1,524
	4 Mos.	4		2066	19	15	602	3	1390	24	472	931	1	23		4	43	182	77	161	15	6,032
Wyoming	April			132			19		95		39	57		2				9	2	16		371
	4 Mos.			502	1		103		328	2	153	213	1	9		1		28	8	111		1,458
Total	April, 1953	168	169	33103	314	201	8894	61	22936	18	8485	10011	94	710	25	36	396	2524	1225	1676	81	91,127
Total	April, 1952	147	153	24391	349	256	8188	98	17888	40	7025	6277	71	785	23	41	265	2534	1015	1624	293	73,491
Total	4 Months, 1953	551	680	113584	1080	718	32631	333	72928	120	29762	35195	261	2251	60	147	1288	9252	4055	6794	331	312,021
Total	4 Months, 1952	556	551	83912	1274	1052	30749	285	59112	194	25189	29207	250	2381	78	214	1012	9031	3762	5961	1001	255,771

* Data from R. L. Polk & Co.

YOU CAN'T USE A MIDGET ON A

MAN-SIZED JOB!



THAT'S WHY MORE and more truck owners are using Federal Trucks for their heavy-duty jobs. They know that Federals are custom built for lowest lifetime cost—that Federals are engineered to give *continuous* new truck performance with lowest maintenance cost.

It will pay you to investigate the advantages of Federal Trucks, engineered for *your* job. You'll find they will haul bigger payloads, longer—for less.

FEDERAL MOTOR TRUCK DIVISION
FEDERAL FAWICK CORPORATION
DETROIT 9, MICHIGAN, U.S.A.

FEDERAL TRUCKS

Custom Built for Lowest Lifetime Cost

.. ICC Safety Regulations

Continued from Page 66

per cent of the release pressure of the safety vent or vents when the tank is subjected to a fire of any magnitude. If but one fusible safety vent is provided, it shall be located in the top of the tank; if more than one fusible safety vent is provided, at least one shall be in the top of the tank.

(ii) All fuel tanks having a fuel capacity in excess of 25 gallons shall be provided with means of relieving pressure in the tank due to fire before such pressure would result in the failure of the body, seams, or any bottom opening in the tank.

(g) Liquid fuel tank capacity markings. The tank shall be marked with its liquid capacity and shall be provided with means to indicate that it shall not be filled to more than 95 per cent of its total capacity.

(h) Liquid fuel tank identity markings. Each tank shall be marked to identify its manufacturer and to indicate the approximate date of manufacture by lot number or otherwise.

(i) *Liquid fuel tank installation*—(1) *General requirement.* The tank shall be mounted in accordance with the best commercial practice.

(2) *Location of fill-pipe*—The nozzle opening in the fill-pipe shall be outside the cab or body and must be so located as to minimize the likelihood of spillage of fuel during the filling process on the exhaust system or battery.

Paragraph (j) outlines the various tests which the tanks must pass before being acceptable and is unchanged from the previously published regulations.

(k) *Liquid fuel tank certification.* Every side-mounted gasoline fuel tank designed and constructed to comply with these requirements shall be plainly and permanently marked with the date of manufacture and a certification of the manufacturer that it complies with such requirements. The certification shall contain the words "Meets ICC requirements — side-mounted — gasoline," or words of similar meaning.

The following definitions have been issued by the ICC as describing side-mounted tanks:

(a) A side-mounted tank on a truck-tractor is one which is outside the frame and except for the fill-pipe is not wholly within the plan outline of the bottom of the cab.

(b) A side-mounted tank on a truck is one, any part of which except for the fill-pipe extends beyond a line on either side drawn through the outside of the front tire of the vehicle in the straight ahead position and parallel to the longitudinal axis of the vehicle.

Heaters

SECTION 193.77, which became effective December 31, 1952, for all motor vehicles has been amended so that the provisions which prohibit the use of solid fuel heaters do not become effective until September 1, 1953.

Wiring

SLIGHT modifications have been made in the regulations covering wiring specifications and installation. Sections 193.27 and 193.33 have been amended in an order dated March 25, 1953, to read as follows: (amendments are shown in italics)

193.27 WIRING SPECIFICATIONS. Wiring for both low tension and high ten-

(TURN TO PAGE 104, PLEASE)

STAND-UP QUALITY

...that makes new customers sold customers

That's what you get in a Niehoff ignition part—the engineering and precision building that mean fast, easy installation and top performance for thousands of extra miles.

NIEHOFF PARTS fit every make and model of popular cars, trucks, buses and tractors

SEE YOUR JOBBER NOW

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Branches:
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Los Angeles 15, Cal., 1330 W. Olympic Blvd.
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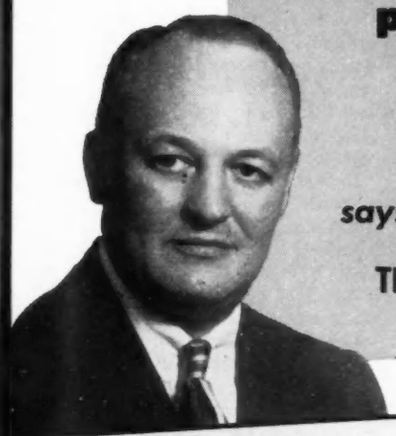
"Wagner Air Brake Systems provide adequate air for our hundreds of stops daily in Chicago metropolitan traffic"

says: H. L. WILLETT, JR.
EXECUTIVE VICE-PRESIDENT
THE WILLETT COMPANY
CHICAGO, ILLINOIS



HOWARD L. WILLETT, PRESIDENT
EST. 1849

THE Willett COMPANY
700 SOUTH DESPLAINES STREET • CHICAGO 7 ILLINOIS • MONROE 6-1492

October 10, 1952

Wagner Electric Corporation
6400 Plymouth Avenue
St. Louis 14, Missouri

Gentlemen:

We lease heavy-duty tractor units to all types of haulers in the Chicago area. These units are in constant use and have to operate efficiently if we are to maintain our standards of service. Because of this we consider the air brake system of vital importance—it must be a safe system in operation, yet require a minimum of maintenance in our shop.

We specify Wagner Air Brakes when ordering new equipment because the Wagner Rotary Air Compressor, in our opinion, has the greatest air recovery and assures us trouble-free operation at all times. We know Wagner Air Brake Systems provide adequate air for our hundreds of stops daily in Chicago metropolitan traffic. Another of its principal advantages is the ease of installation—especially the size and compactness of the rotary air compressor. We have experienced little or no difficulty with the units we've installed. Such an outstanding record is the reason why we recommend Wagner Air Brakes and Wagner Rotary Air Compressors to owners of other heavy vehicles.

Sincerely yours,

Howard L. Willett Jr.

H. L. WILLETT, JR.
Exec. Vice-President

HLW,JR., jr

Willett Motor Coach ... Willett Truck Leasing Company • Willett Transports Inc.

Men like Mr. H. L. Willett, Jr., have proven for themselves that WAGNER AIR BRAKES give them maximum freedom from maintenance worries and cut costly repair jobs on their brake systems. Much of the credit for this record of dependable service is largely due to the WAGNER ROTARY AIR COMPRESSOR—the compressor that assures an adequate supply of air at all times. Many fleets report that even after *years* of service they have never had a single compressor failure on units equipped with a WAGNER ROTARY AIR COMPRESSOR. Users like its simplicity of design, compactness of size, ease of installation, and economy.

You, too, can keep maintenance costs at a minimum by having your present vehicles equipped with dependable, trouble-free WAGNER AIR BRAKES . . . and make sure you specify WAGNER AIR when ordering new equipment. You can get full details on WAGNER AIR BRAKES by sending for your free copy of WAGNER Bulletin KU-201A. Mail your request today.

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LOCKHEED HYDRAULIC BRAKE PARTS and FLUID...NoRoL...CoMaX BRAKE LINING...
AIR BRAKES...TACHOGRAPHS...ELECTRIC MOTORS...TRANSFORMERS...INDUSTRIAL BRAKES

K53-3

. . . ICC Safety Regulations

Continued from Page 102

sion circuits shall be constructed and installed so as to function reliably and adequately and shall conform to the appropriate requirements in the SAE Standard for "Insulated Cable" *or by wiring which is mechanically and electrically at least equal to such cable* . . . etc.

193.33 WIRING, INSTALLATION. Electrical wiring shall be systematically arranged and installed in a workmanlike manner. All detachable wiring, except temporary wiring connections for driveway-towaway operations, shall be attached to posts or terminals by means of suitable cable terminals which conform to the SAE Standard for "Cable Terminals" *or by cable terminals which are mechanically and electrically at least equal to such terminals* . . . etc.

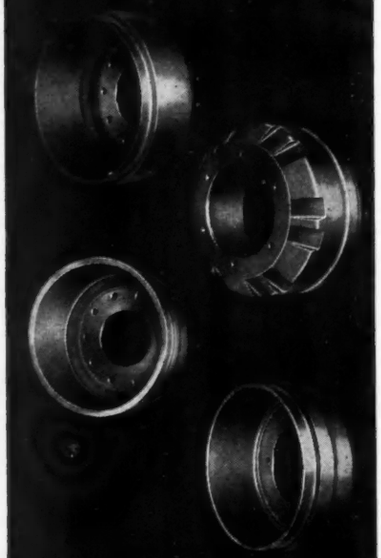
END

Please Resume Reading Page 67

more stopping power with

HOMAN DRUMS

FOR CAST SPOKE AND DISC-TYPE WHEELS



Homan Brake Drums are made of the finest close grain, chrome iron alloy for longer, more efficient wear. They are precision machined to insure concentricity, longer brake lining life and to guarantee an even braking surface. Designed and built to dissipate heat quickly and minimize checking.

Homan Drums are a sound investment in preventive maintenance.

For complete details, write today.

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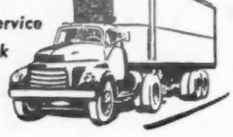
ESTABLISHED 1847

For Fast Dependable Service Ship by Truck Trailer



U. S. Reefer Tests

Continued from Page 82

conducted by the Department on one type of refrigerating unit which uses dry ice in bunkers in conjunction with an air circulating system. The particular transit test which appears here was chosen because it most closely meets the conditions under which the other types of equipment were tested.

Refrigerating Unit: The basic unit was a welded aluminum bunker with a capacity of 900 lbs. of dry ice. It consisted of finned exterior surfaces supported by a welded steel frame and enclosed by an outer steel housing. The dry ice blocks were placed on three aluminum shelves which were welded to the exterior fins to provide maximum conduction of heat. Shelf compartments were sealed by a gasketed access door so that the dry ice did not come in contact with the air in the cargo space. Valves were arranged so that the carbon dioxide resulting from the sublimation of the dry ice could be released either into the cargo space or to the outside.

Air circulation in the trailer was provided by two blower fans located above the bunker. One fan operated continuously, drawing air through a bypass in the unit. The other, regulated in its operating cycle by the thermostat setting, pulled the air from under the floor racks, passed it over the finned surface of the bunker for cooling, then distributed it over the load. Both fans were operated from the tractor battery. For lay-overs, an accessory transformer was available for connection to any 110-volt a.c. power source.

Trailer: The 32-foot 6-inch trailer had six inches of fiberglass insulation in the walls, flooring and ceiling. Outside sheatheng was aluminum, inside was plywood. Vertical channels ⅞ in. deep by 6 in. wide were formed on the side walls by wooden slats. Floor racks allowed a space of slightly more than two inches for air circulation below the load, and vertical air channels were formed on the doors by 2 in. by 1⅝ in. wooden strips spaced six inches apart. Heavy canvas curtains were provided at the rear doors to minimize the loss of refrigeration during loading and unloading operations.

Precooling Tests: From an original temperature of 57°F the unit was iced with approximately 960 pounds of dry ice and the thermostat set at 0°F. For the next 24 hours a very close check was kept to determine the rate of temperature decline at six different locations inside the trailer.

Temperatures began to drop steadily immediately after the air-circulating fans were turned on. However, it was not until 18 hours later that temperatures in all six locations registered below 0°F. At this point the thermostat automatically shut off the refrigerating fan. The test was concluded six hours later, at which time the average temperature inside the trailer had

(TURN TO PAGE 106, PLEASE)

Joseph E. Headley
President

Thomas J. Higgi
Sec. & Gen. Mgr

Headley's Expres
Storage Company,
has been in busin
Chester, Pa., sinc
–doing hauling, r
steel erecting, st
and crane service

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America

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COSTS A
SEND FO
SEIBERLING
MILEAG
FIN
Find out wh
costs *really*

Joseph E. Headley
President

Thomas J. Higgins
Sec. & Gen. Mgr.

Headley's Express and Storage Company, Inc., has been in business in Chester, Pa., since 1874 –doing hauling, rigging, steel erecting, storage and crane service.

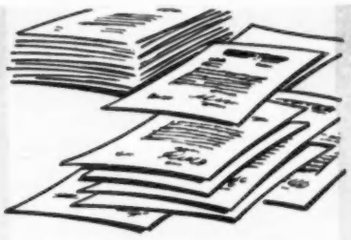
"We gave Seiberling TL tires a real work-out

. . . on fast Pennsylvania Turnpike runs
. . . hauling steel over the Alleghenies
. . . on tough off-the-road jobs
. . . moving heavy equipment

and our records showed that TLs reduced cost per mile by 35%!"

Joseph E. Headley
Thomas J. Higgins

If *you* are interested in lower cost per mile, your Seiberling Truck Tire Dealer would like to talk it over with you. Why not call him today?



Truck operators in all parts of the country are sending in reports like these:

CONNECTICUT
"15,000 to 18,000 miles on regular tires—60,000 miles on TLs."
EDWARD CHAPPELL CO.
Norwich, Connecticut

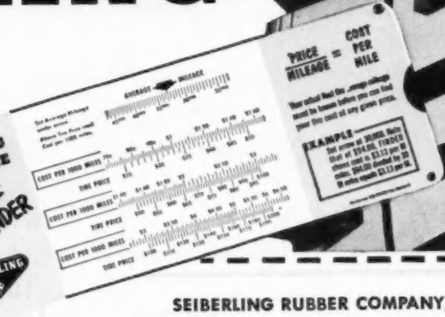
KANSAS
"Over 120,000 miles before first recapping—and now have third cap on some of these TLs."
WESTERN STAR MILL CO.
Salina, Kansas

MISSOURI
"Have been using TLs for past 4 years and they're best by far in our better than 30 years of tire buying."
KEIGHTLEY BROS. COAL & COKE CO.
St. Louis, Missouri

TEXAS
"130,000 miles hauling over 2,360,000 pounds of fruits and vegetables, and never had a flat."
KEYSTONE FRUIT CO.
Brownsville, Texas

SEIBERLING

Makers of
America's Finest Tires and Tubes



KNOW YOUR TRUCK TIRE COSTS AT A GLANCE!

SEND FOR THIS SEIBERLING TRUCK TIRE
MILEAGE COST FINDER

Find out what your tire costs *really* are, per mile.

It's Free

MAIL THIS COUPON NOW!

SEIBERLING RUBBER COMPANY, Akron 9, Ohio

Dear Sirs: Please send me, without obligation, a Seiberling Truck Tire Mileage Cost Finder.

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*FIRM NAME*_____

*STREET ADDRESS*_____

*CITY*_____ *STATE*_____

CCJ-2

U. S. Reefer Tests

Continued from Page 104

risen approximately 3°F with only the circulating fan operating.

Observation: Approximately 790 pounds of dry ice were consumed in this test, representing a rate of sublimation of approximately 33 pounds per hour for a 24-hour period.

Transit Test: The refrigerating unit was initially iced with 980 pounds of dry ice. Cargo at an average temperature of 0°F was loaded during a 50-minute period. Time elapsed from the beginning of loading until the end of unloading was 75 hours and 40 minutes, including a one-hour period during which the fans on the refrigerating unit did not work because of a mechanical failure of the tractor. Outside temperatures during this period ranged from a low of 70°F to a high of 95°F, with an average of 80.6°F. Maximum temperatures in the top of the load during transit was 6.5°F and minimum was —1.5°F. Both of these readings were recorded prior to the failure of the fans due to the tractor breakdown. Average temperature in the top of the load was 2.6°F. Maximum and minimum temperatures in the bottom of the load were 6.5°F and —2.5°F, with the minimum reading recorded immediately after the loading was completed, while the maximum was reached 68 hours and 5 minutes later. Average temperature in the bottom of the was 1.3°F. The "in-transit" temperature range is shown in Fig. 4.

It was necessary to re-ice the unit once during the trip with 450 pounds of dry ice. At the end of the test it was found that a total of 1,208 pounds of dry ice had been consumed, for an hourly consumption rate of approximately 24 pounds.

Observations: The heavy canvas curtains provided at the rear doors were not closed during the trip. Reason for this is that if they had been closed they would have curtailed circulation of air around the load and would have nullified any benefit derived from the vertical strips nailed to the rear doors.

The test indicated that unloading should be started immediately after the doors are opened at destination. Otherwise, there will be a rapid rise in temperature in the commodity at the top and end positions of the load.

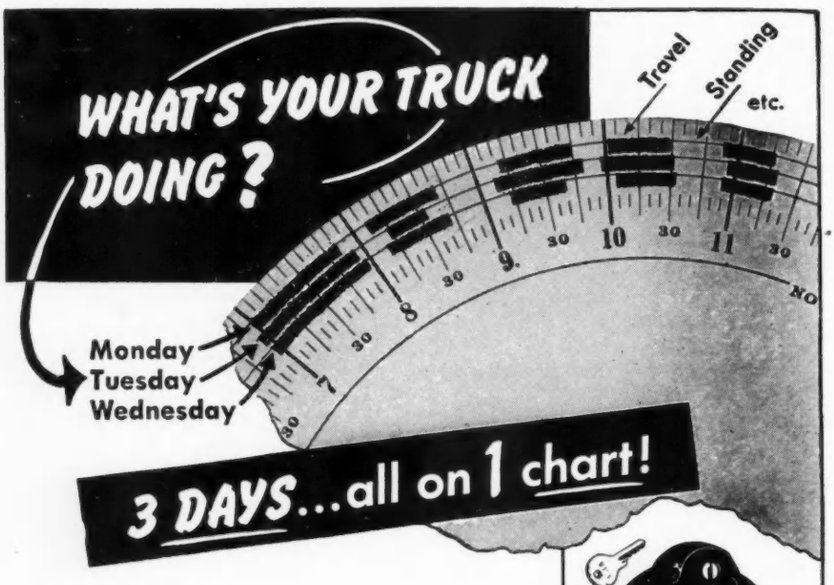
5. Dry Ice System Using A Secondary Refrigerant

Refrigerating Unit: Refrigerating equipment consisted of a dry ice bunker; a pressure tank; another tank which controlled the flow of the refrigerant; control valves and 1800 lineal feet of ⅜ in. aluminum tubing over a drip pan suspended from the ceiling of the trailer over the cargo space. Operation of the system was regulated by a thermostat located at the ceiling of the trailer about 10 feet from the rear door. Pressure built up by sublimation of the dry ice caused the secondary refrigerant (a polyatomic alcohol) to flow through the system when required. During the operating cycle the fluid passed through coils under the main supply of dry ice where it was cooled. It then passed through the coils in the ceiling of the trailer, cooling the cargo space.

Trailer: Standard 30-feet semitrailer with six inches of fiberglass insulation in the ceiling, side walls, ends and floor. Outside sheathing was corrugated stainless steel and the inside was corrugated aluminum with vertical grooves ⅞ in. deep. Wooden floor racks provided a clearance of two inches under the cross slats. Stringers of the floor racks were laid crosswise and the slats on which the cargo rested were fastened at right angles to the stringers, lengthwise to the trailer. Purpose of this arrangement was to permit cold air from the cooling coils to circulate down the side walls and under the load. The dry ice bunker and equipment were sealed off from the cargo area by an insulated wall so that higher temperatures could be maintained in the body of the trailer for fresh products not requiring such intense refrigeration. The bunker also served to prevent entry of warm air into the cargo space during re-icing.

Precooling Test: In the precooling test the trailer reached 0°F 12 hours and 45 minutes after initial icing. During this pe-

(TURN TO PAGE 108, PLEASE)



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Genuine Ford Parts save repair time and money. Here's why:

• Fleet owners find that maintenance costs drop when Genuine Ford Parts are used in all repair jobs because they're easy to put in, hard to wear out!

Mechanics find them easy to install because they're made right to fit right; and this means your fleet units spend less time in the shop.

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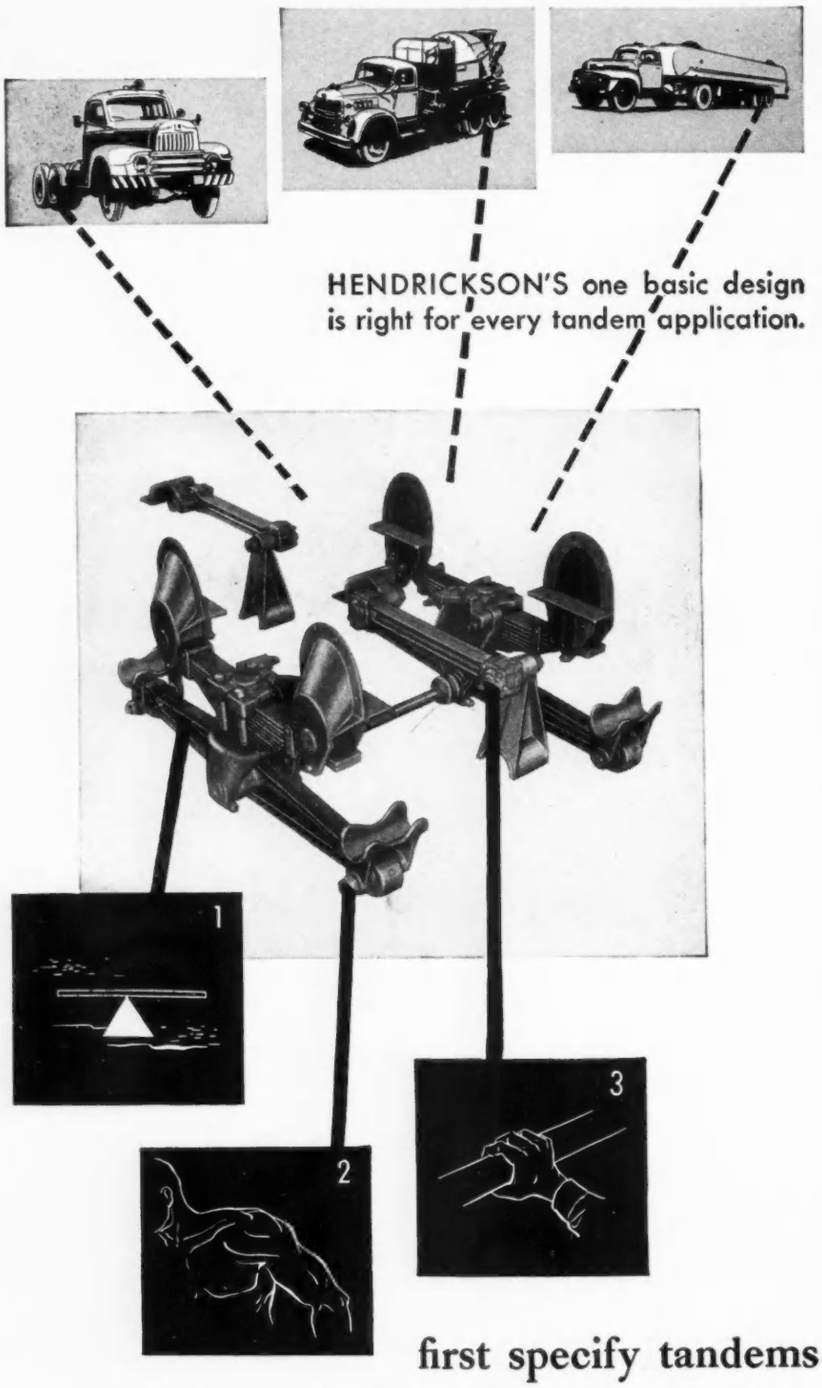

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U. S. Reefer Tests

Continued from Page 106

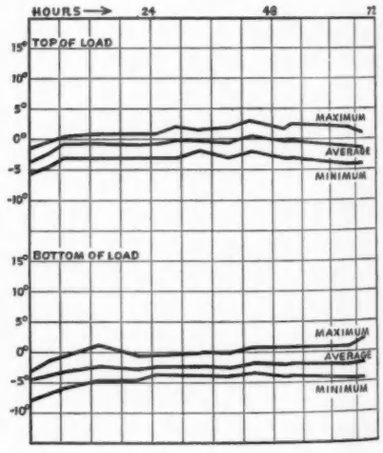
riod the outside temperature ranged from 49°F to 72°F. At the conclusion of the test (9 hours and 15 minutes later), a further reduction to —10°F had taken place. During the test the system consumed approximately 710 pounds of dry ice, showing an average hourly rate of 32.3 pounds for the 22-hour period.

Transit Test: The empty trailer was initially iced with 1234 pounds of dry ice in the bunker and pressure tank. The thermostat was set at —5°F. Loading was completed in 55 minutes, during which time the outside temperature was 88°F.

During the trip dry ice was added three times; 28½, 44, and 51 hours and 20 minutes after loading was completed, in 142, 312 and 300-pound lots. At the end of the trip there was approximately 200 pounds of dry ice remaining so that a total of 1,788 pounds of dry ice were used during the test at an average hourly rate of 24.8 pounds.

Time elapsed from the beginning of loading until unloading was completed was 72 hours and 40 minutes. Outside temperatures during this period ranged from a low of 51°F to a high of 92°F, with an average outside temperature of 69.5°F.

Fig. 5. Secondary Refrigerant
With adequate cooling and circulation, top and bottom temperatures were held to satisfactory limits.



The "in-transit" temperature range is shown in Fig. 5. Maximum temperature in the top of the load during transit was 2.8°F, minimum was —5.5°F, with the average at —0.9°F. In the bottom of the load the maximum was 2.0°F, the minimum was —7.9°F and the average was —2.5°F.

Observations: The average temperature for the entire load showed a rise of 2.3°F over the course of the trip. Average temperatures in the top and bottom of the load showed a gradual rise until the third re-icing, then a slight drop occurred for the remainder of the trip.

END

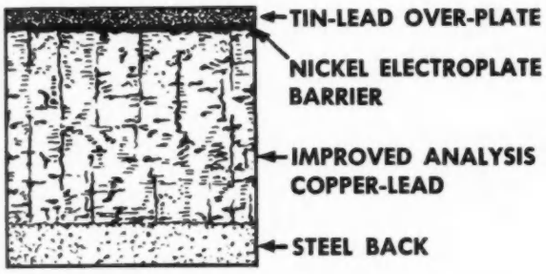
Please Resume Reading Page 83

A bearing doesn't have to be beautiful to be 3½ times better than babbitt

THE Thompson CL-77 heavy duty bearing, often called *"The Ugly Duckling"*, has a tin-lead plating which makes it appear a dull grey—not bright and shining like other bearings. But when you find it wearing *3½ times longer* than babbitt in the engines you service, you forget about appearance and feel mighty good about its performance.

Mileage records being made by the CL-77 are sensational. It is an engineering achievement which not only saves money for the owner of the engine, but makes money and good friends for the man who installs it.

Your Thompson Jobber's catalogs contain hundreds of CL-77 bearing listings. Get CL-77's from him for the heavy-duty engines you service.



THE SECRET OF THE CL-77 is shown in this cross-section picture. Note nickel barrier which prevents diffusion of tin-lead plating into copper-lead base metal. This is an exclusive patented feature of the CL-77.

THOMPSON ENGINE BEARINGS for replacement use are exact duplicates of those used by car, truck, bus and tractor builders for original equipment. These bearings include: *Micro-babbitt* (tin or lead base) bimetal; *Conventional babbitt* (tin or lead base) bimetal, steel back; *Copper-lead* bimetal, steel back; *CL-77* heavy-duty tri-metal (tin-lead, nickel and copper-lead base), steel back.

The heart of Thompson U-FLEX • AEROTYPE Piston Ring Sets is the revolutionary U-FLEX oil control ring

U-FLEX • AEROTYPE Ring Sets are available for all engines in which U-FLEX is used by car, truck and tractor builders. Look for the black-and-gold U-FLEX • AEROTYPE set boxes on your TP Jobber's shelves—they're truly the new "GOLD STANDARD" for piston ring performance.

See your Thompson Products Jobber

SERVICE DIVISION
2209 Ashland Road, Cleveland 3, Ohio

Low Temperature Welding

Continued from Page 79

strength of the adherence of the oxide to the metal. It is essential that oxides be removed if maximum bond strength is to be obtained.

The formation of oxides is continuous. When the oxygen of the atmosphere combines with a metal, a metallic oxide is formed. The commonest of these is seen in the form of rust and the speed with which the oxide will form depends upon the character of the metal. Aluminum has a very high affinity for oxygen and oxides will reform almost as rapidly as they are removed. This bonding problem may be overcome by the use of a suitable flux.

Surface tension must be lowered if optimum results are to be obtained. A needle may be floated upon the surface of a glass of water but if a detergent is added, the surface tension is lowered and the needle sinks. Metals have a similar film and it is one of the functions of the flux to "wet" the metal. This lowers the surface tension and permits the penetration of the film to promote the flow and bonding properties of the alloy.

Thus the flux lowers the surface tension, dissolves the oxides and forms a protective covering to prevent the atmospheric oxygen from combining with the metal. The clean metal underneath this flux coating is an ideal base for the subsequent joining operation. The wetting characteristics of the weld metal are greatly enhanced and instead of being deposited in stationary globules, they flow out and cover any surface the flux has wet.

Eutectic's fluxes are Temperature Indicating. The flux is so formulated that its melting point is the approximate bonding temperature of the alloy. This removes all the uncertainty from joining operations. There is no danger of overheating the parent metal. The melting point of the alloy is always below that of the parent metal, so the flux becomes a temperature guide and as long as directions are followed, perfect joints can be obtained.

Metals such as aluminum do not show heat color and there would be no practical means of determining the heat at which the alloy should be applied without the use of this flux. The wetting properties of the flux aid and promote the surface alloying at the interfaces of the joint and help diffusion and penetration.

Metallic Arc Welding

THIS technique is used in many operations where large sections are involved; where preheating is impractical, and where over-heating and warpage must be avoided.

In these special type alloys described, the lowest possible application heat is used. This is why, in most operations, a short arc is recommended.

The heat of an arc is increased in direct proportion to its length. When a short arc is maintained, the heat is kept to a minimum and the danger of warpage and embrittlement minimized. A short arc will deposit metal at a greater speed. These are cost factors which must be taken into consideration. Quicker coverage with less current consumption will reduce the cost of the job considerably.

The distinctive properties of these electrodes are due to their formulation and the careful balance maintained between core metal and coating, so less heat may be used. This minimizes the danger of changing the metallurgical characteristics of the parent metal.

(TURN TO PAGE 112, PLEASE)

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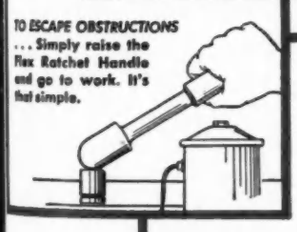
The Most Ingenious Ratchet Design in a Decade!

COMPACT · STRONG · REVERSIBLE

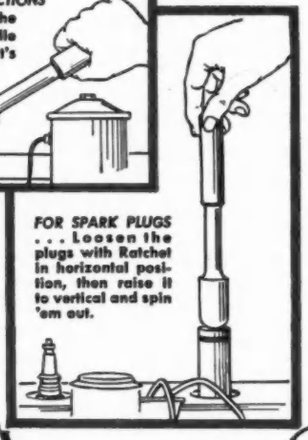
New Britain FLEX RATCHET

A TWIST OF THE WRIST

and the NEW BRITAIN Flex Ratchet reverses. Just rotate the handle either left or right, and the ratcheting action is in the direction you want it.



TO ESCAPE OBSTRUCTIONS ... Simply raise the Flex Ratchet Handle and go to work. It's that simple.



FOR SPARK PLUGS ... Loosen the plugs with Ratchet in horizontal position, then raise it to vertical and spin 'em out.

HERE'S THE FIRST REALLY PRACTICAL NEW RATCHET DESIGN IN MANY YEARS. . . . A BIG help in work on modern cars and aircraft engines where clearances are often only fractions of an inch. You can work in many inaccessible places with this new 3/8" Square Drive Reversible Flex Ratchet.

Here's a Tool, only 7" long, compact enough to fit into close quarters, yet long and powerful enough for adequate leverage. Modern head design eliminates overhang, whether at right angle position or tilted to escape obstructions. Especially useful in easy access to differential drain plugs. In fact, there are scores of places under the hood on modern cars and trucks where it offers the only quick and really practical means of getting at and around obstructions to many accessories and parts. Ask your Jobber about this great new Ratchet today.

NAPA Assurance of Quality

New Britain HAND TOOLS

GREATER STRENGTH · BETTER FIT

THE NEW BRITAIN MACHINE CO. • NEW BRITAIN, CONN.

Low Temperature Welding

Continued from Page 110

The arc should be struck upon scrap metal when welding cast iron or tool steel, and carried to the weld area. It should be broken upon deposited metal. The tendency to break the arc by withdrawing it from the part should be avoided in most cases. This lengthens the arc to its fullest extent, increases the voltage, intensifies the heat and causes hard spots and weld crater cracking and porosity on cast iron.

The size of the electrode is determined by the work it is to perform and the current it is to carry. The electrode acts as the electrical conductor and, should the diameter be too small for the load, the electrode will break down or "hot-short."

When relatively large quantities of metal are to be deposited, it is uneconomical to use a small diameter electrode. A good rule to follow is to use the largest convenient size for the job to be done. It may be necessary to start the weld with a small size and, after the initial deposits have been made, to continue with a larger electrode to keep the work moving at top speed.

The larger electrodes permit a high rate of speed to be maintained because of the greater amount of metal deposited. They are therefore more economical, faster, and have greater arc stability.

The FrigidArc coating (U. S. Patent) was developed to improve the properties and performance of arc electrodes. When the arc is struck, the metal at the tip of the electrode is melted by the heat of the electric arc. The particles of molten metal travel the path of the arc stream at tremendous velocity under the influence of an electro magnetic field. Some of these particles attain such a speed that the velocity exceeds that of the arc stream and they shoot off at a tangent. These particles are deposited on the work as weld spatter. To confine and direct them within required limits, a coating is applied to the electrode.

These coatings have many functions. Some break down to form protective atmospheres of good electrical conductivity; others are reduced more slowly than the core and form a tube through which the metallic stream is projected and concentrated. Coatings may be formulated to act as deoxidizers and scavengers of the molten weld metal, to replace elements lost from the electrode during the process of welding, and to introduce alloying elements into the weldment. A general function is to form a protective slag upon the weld metal which retards cooling. The continuity of the arc stream is maintained, aided and controlled by this specially formulated coating.

Cleaning

ALL welding operations are more satisfactory when performed upon clean surfaces. Electrodes are available which may be applied directly to metal that has not been cleaned, but the resulting bonds would be improved if deposits were applied to clean metal.

In torch applications the surface should be degreased and all dirt, rust, moisture, etc., removed. This will permit the flux to do the job for which it is intended. If the flux is expected to possess all the properties mentioned earlier, it should not be used as a solvent cleaner as well. This will so weaken its action that poor bonds will result.

Thin Flowing Alloys

THOROUGHLY clean the surfaces to be bonded. Remove all scale, oxides and grease. Clean surfaces act as an insurance against bond failure. The welding operation should not be delayed after the metal is cleaned be-

(TURN TO PAGE 114, PLEASE)

Years of research and experience have resulted in giving you all the answers to your heavy-duty braking problems. Mold-Blok is available in a friction range to give the best possible service for all jobs — old and new. You'll find Mold-Blok thoroughly dependable — proven best by test.

* The snake finds no end to begin swallowing, so slinks away.

MOLDED MATERIALS DIVISION
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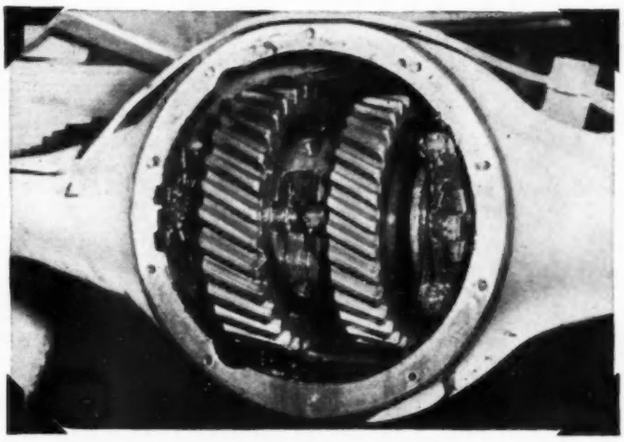
THE ENGINEER'S REPORT

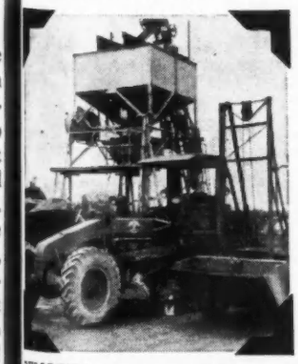
DATA

LUBRICANT: RPM Gear Lubricant
UNITS: Differentials, transmissions, final drives
OPERATION: Highway construction, hauling, etc.
CONDITIONS: Extreme overloading
FIRM: Baker Trucking + Constr. Co., Richfield, Calif.

No gear units changed in 7 years of tough work!

120,326 MILES WITHOUT ADJUSTMENT is the record of the gear unit (right) in the 2-ton truck shown above. This truck is one of 16 pieces of equipment owned by the Baker Trucking and Construction Co., Richfield, Calif. Using RPM Gear Lubricant, they have not had to change a single drive gear because of lubrication failure in more than 7 years of rough going. The truck above, for example, carries average 8-ton loads of gravel from river bed to mixing plant, then out to highway work.





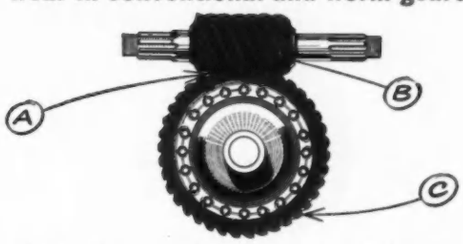
GRADERS, TRACTORS, and shovels are used by the Baker Company on tough road construction jobs in the Sacramento Valley. Working constantly in rock, gravel, and dirt, units are always in heavy dust. RPM Gear Lubricant is used in all transmissions, differentials, and final drives—reduces wear, keeps them on the job.

REMARKS: Because RPM Gear Lubricant has very high oiliness qualities and stability, it is especially valuable for the lubrication of all conventional gears. It is also recommended for bronze worm gears. (For hypoids of all kinds, RPM Multi-Service Gear Lubricant is recommended.)

RPM

TRADEMARK "RPM" REG. U.S. PAT. OFF.

How RPM Gear Lubricant prevents wear in conventional and worm gears



A. Made from paraffine stocks with special compounds that help provide a tough film—gives extra tooth protection, withstands shock and overloads.

B. Has high resistance to oxidation—resists deposit formation, assures lubrication in high temperatures.

C. Contains foam inhibitor—prevents expansion and high gear-case pressures.

FOR MORE INFORMATION about this or other petroleum products of any kind, or the name of your nearest distributor handling them, write or call any of the companies listed below.

STANDARD OIL COMPANY OF CALIFORNIA, San Francisco 20 • STANDARD OIL COMPANY OF TEXAS, El Paso
THE CALIFORNIA OIL COMPANY, Barber, New Jersey • THE CALIFORNIA COMPANY, Denver 1, Colorado

Low Temperature Welding

Continued from Page 112

cause the formation of oxides is very rapid on certain metals. Apply the Temperature Indicating flux to the joint area. This may be in the form of a paste or powder. Assemble the parts with the recommended clearance for maximum strength. When heat is applied the flux will dry out, if in paste form, and later become liquid. The torch should be kept in constant motion to give a uniform heat throughout and to prevent over-heating the flux in any one spot. When the liquid flux begins to spread out, it is a sign the approximate bonding heat has been reached, and the alloy should be applied.

The heating is continued now with the torch in constant motion until the alloy penetrates the entire joint. In butt joints, penetration will be complete when a neat fillet appears around the joint. Thin flowing alloys can be drawn through long lap joints by maintaining an even heat. The alloy will follow the heat, and the torch flame can be used to draw it through the joint.

Bead Forming Alloys

THE preparation and fluxing is similar to that described, with the exception that the parts should be veed and heated slightly to remove the chill.

When the flux starts to liquefy, the end of the rod is held in the flame until a drop of alloy is deposited on the weld area. The torch is held at a low angle and the alloy flowed in the desired direction. As fast as the filler metal flows out, more is applied until a smooth uniform joint has been made. The heat should never be intense enough to melt the base metal.

Arc Welding Procedures

THE surfaces to be welded should be veed to a 90-deg angle and thoroughly cleaned. The parts are then assembled with a slight clearance between the members to allow the alloy to penetrate and ensure continuity.

Pre-heating is not essential with the special low heat electrodes, but if the chill is removed from the part performance will be improved, spatter will be reduced, amperages will be lower, and flatter welds will be obtained with less alloy.

The amperage and polarity recommended should be followed strictly.

When multiple pass welds are to be made, slag should be chipped and the weld wire-brushed between successive passes. This procedure is necessary for all arc welding alloys except Steel-Tectic which has been especially designed to eliminate this operation.

END

Please Resume Reading Page 80

LEMPCO
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60 Ton
Hydraulic Press
You're in for a surprise if you haven't checked this price recently!
For years LEMPCO had the highest priced 60-Ton Press on the market. Hundreds were glad to pay the higher price because of features found nowhere else. Now, thanks to some changes in design, this same press is available at savings of $200 to $300 over former models.
Among the features are: three pumping speeds; head moved on roller bearings; quick ram adjustment screw; crank type self-locking bolster raising mechanism.
Accessories that can be used on any press:
Test Center Attachment
Universal Joint Tool
Ring Gear Riveting Fixture
LEMPCO
PRESSES
17 MODELS, ½ TON TO 150 TON
ELECTRIC—HYDRAULIC
Now is the time to replace that ailing or inadequate press—write for price and description.
For 35 years a leading builder of machine tools
LEMPCO PRODUCTS, INC.
Bedford, Ohio
Gentlemen:—Kindly send details on LEMPCO 60-Ton Hydraulic Press or_____.
NAME_____
ADDRESS_____
CITY_____STATE_____

Two Out of 68

"Hot item" for our armed forces in Korea, outside of planes and ammunition is refrigerated transportation, using trailers like these built by Andrews Industries, Inc., St. Louis, Mo. Designed to carry whole blood or plasma, frozen foods, fresh meat and vegetables at below freezing temperatures, they are the first of sixty-eight to be produced by Andrews. Twenty feet long, of all aluminum construction, the refrigerated transports have 6-in. insulated walls and self powered refrigerating units.

Mobile Spray Booth

Continued from Page 86

quipment to handle a heavy mix. Present figures indicate that we should be able to amortize our investment in about five years.

The booth is mounted on 16 lb rails. A hydraulic motor moves it at speeds up to 35 feet per minute. For actual spraying we find that the best speed is between 10 and 15 feet per minute.

Completely equipped with all required spray equipment including compressors, tanks, spray guns and explosion-proof lamps, the booth also has emergency escape doors and CO_2 extinguishers for protection in case of fire.

Adjust Schedules

OUR original plans called for refinishing from three to five coaches per day on a five-day week. This schedule was later adjusted so that we are now averaging 2½ refinishing jobs per day, five days per week, with a possible further reduction of the frequency of repainting so that paint jobs will be done when the vehicles need it rather than on a time schedule.

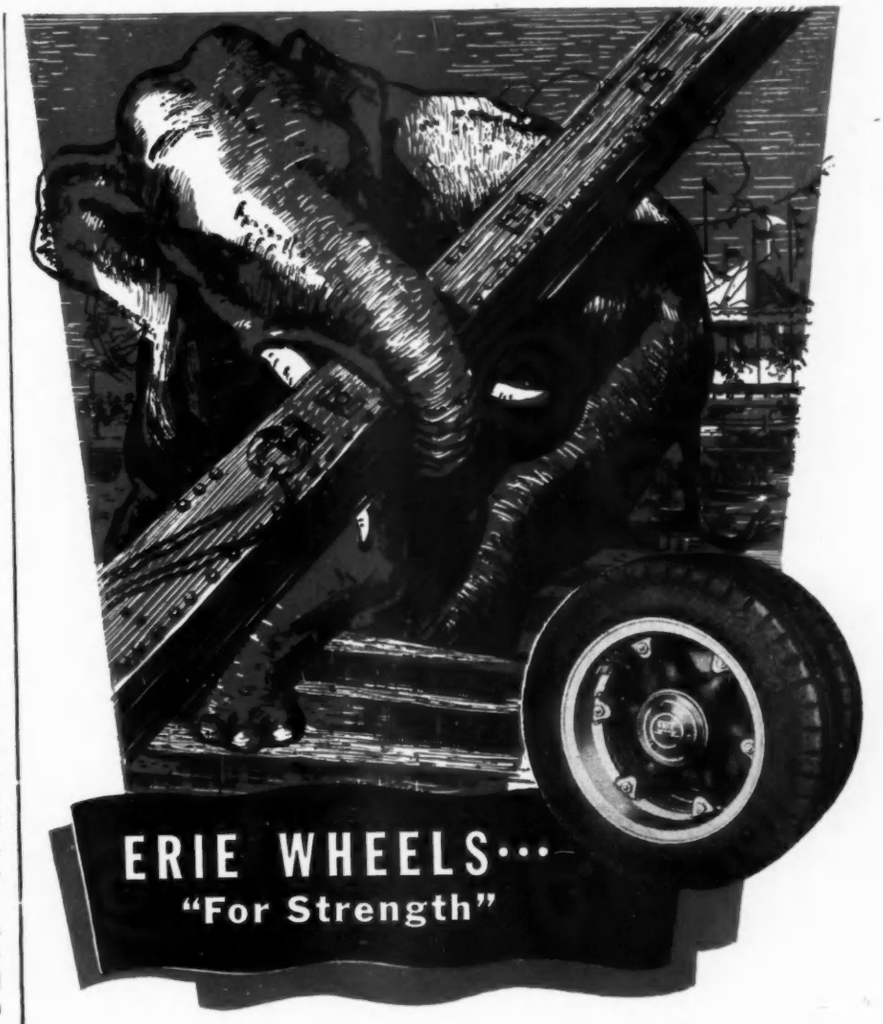
Prior to painting, all coaches are prepared on a line parallel with the spray booth. Dents are filled with lead, cold solder or glazing putty, depending on the depth of the dent and the nature of the metal. All loose paint is knocked off and the metal is primed. At the same time inside repairs are made, glass is masked and the vehicle is then moved over to the painting line.

After complete spray painting of the top and sides of the bus, lettering and fine painting is completed. We usually have three to four men on spray painting, three on lettering and striping, one touch-up, one mixer, two on interiors and a couple of men to take care of clean-up and miscellaneous operations. Normally the equipment is started around 10 a.m. and by about 2:30 it is possible to have three coaches completed.

In return for our investment, we have an efficiently functioning re-painting department, which turns out neater jobs, since the spray painter can concentrate on his spraying, need not move around the bus. In addition we were saved the expense of building a new paint shop, since our present facilities are not sufficiently roomy to permit installation of standard painting equipment of equal work capacity.

END

Please Resume Reading Page 89



Erie Wheels . . . combine light weight with great strength. Tubular-Spoke design . . . preserves inherent balance . . . gives fan like action to spokes . . . to cool tires and brake drums . . . Erie Wheel design . . . offers strong, light wheels that permit extra payload . . . Demountable rims make tire changes easier. Erie Brake Drums . . . of alloy iron . . . provide high coefficient of friction . . . wear evenly . . . last longer . . .

Specify . . . Erie Wheels and Brake Drums

Erie Wheels

ERIE MALLEABLE IRON COMPANY

Automotive Wheel Division

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252

John Bull Sells Back His Trucks

Continued from Page 67

valuable operating rights which go with it. All trucks bought as part of a transport unit will be granted a "Special A" license which will allow them to be used for hauling for compensation throughout the length and breadth of the island. This will give the operators of such trucks a good start in long-distance for-hire transportation, since they will enjoy this field all to themselves until the end of next year.

After this period of re-establishing the truckers, the existing restriction on local "for hire" truckers will be removed. This group has never been nationalized, but has been limited to a 25-mile operating radius.

For some local haulers, the lifting of the restriction will be a great boon, but to the many who have always based their businesses on urban haulage, it will make little difference except to remove a purely artificial limit.

Of course, private trucking, which operates in Britain under the "C" license, has been unrestricted as far as range of operation is concerned, and will continue to remain so. During the period of nationalization, the number of private trucks has increased enormously. Whether this is a case of cause and effect, or whether other factors have been at work, has been a subject of acute political controversy. Several critics are contending that the barometer of success of de-nationalization will be the statistics of the number of "C" licensed trucks. Real success, they argue, can only be claimed if the number of private trucks declines.

This argument forgets, however, the ever-increasing role which trucks are playing in the life of the country. It seems likely that the total number of trucks in Britain will continue to grow, and it must be expected that this growth will be shared in by private trucking.

Expensive Experiment

WHILE the experiment in nationalized trucking is thus being brought to an end, its aftermath will remain. The Government has frankly recognized that the assets which it will sell will not realize their capitalized values. The exact cost of setting up the nationalized trucking corporation is still not known, but it is believed to be around $250 millions. The sale of the assets will certainly not produce that amount. Moreover, additional costs will be incurred in the disposal arrangements themselves.

The Government has stood by the principle that these losses and costs, rather than being borne by the national treasury, should be paid for by the highway transportation industry. Accordingly, a new tax will fall on highway operators starting next January. While this additional taxation on an already overtaxed industry has been bitterly resented, it has been difficult to press this opposition too keenly for fear of upsetting the whole of the denationalization scheme. The Government has, moreover, done its best to confine the new tax strictly to the amount required *to cover the cost of the nationalization experiment.* It is expected that this will be achieved in about five years, when the tax should automatically be cancelled. The great danger, however, is that taxes, once imposed, are not usually easy to have cancelled; politicians, especially needy Chancellors of the Exchequer, can usually find some

(TURN TO PAGE 120, PLEASE)

For Maximum Usefulness From Your Light Trucks

• Carry-All Model B-750 for ½-ton chassis. 32 cubic feet of added carrying space in 6 compartments. 25 square feet of floor space. Can be fully enclosed with Carry-All Caravan Top or Carry-All Sliding Roof. Carry-All Model B-910 fits all ¾ and 1-ton chassis.

FOR TOP OPERATING EFFICIENCY . . . equip your light trucks with Morrison Carry-All Service Bodies . . . models to fit *any* ½, ¾, or 1-ton chassis. Easily mounted on old or new chassis by your regular maintenance men . . . easily transferred from one chassis to another without special tools or equipment . . . they offer *extra* cubic feet of carrying space and engineered adaptability to public utilities, contractors, and service industries.

SAVE TIME, LABOR . . . Carry-All's key-locked compartments, material trays and parts bins keep tools and supplies safe and easy to find. With Carry-All's complete line of Efficiency Accessories, they tailor any light truck to your specific business needs . . . without the "custom-built" price. Here's a sure way to save time . . . to get more productive man-hours.

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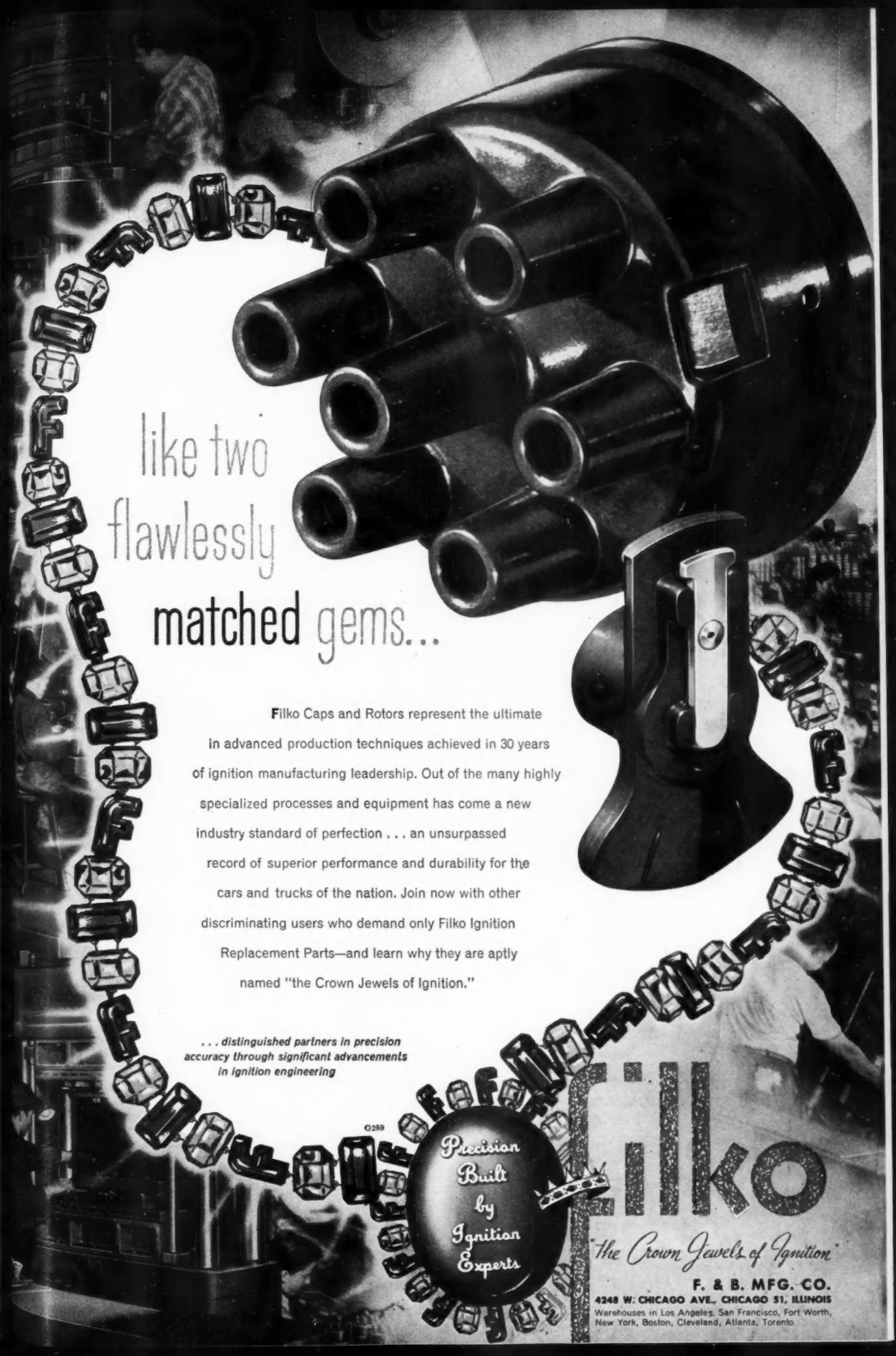
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John Bull Sells Back . . .

Continued from Page 118

fresh and compelling needs to require their continuance.

The new tax is an annual levy which will be calculated at about $2 for every ¼-ton of unladen weight of each truck. It will be imposed on all freight-carrying trucks, including those of private operators.

In addition to the new tax, truckers will be faced with greater competition from the still-nationalized railways. Aiming at greater competition in transportation, the Government has given the railways a much larger measure of freedom in regards to rates and charges than they previously enjoyed. No longer are they compelled to publish their rates nor are they obliged to avoid undue preference between different shippers.

END

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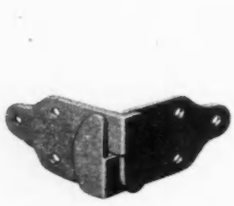

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Port "Ground Rules"

Continued from Page 83

port work were cautious about stating any actual figures of time saved. Mostly, they said, because the plan has not been in operation long enough. All those surveyed were, however, strongly behind the new rules. Sample comments and "off-the-cuff" estimates of time saved are as follows:

"They are a fine set of rules. Waiting time has been cut about 10 per cent."

"There should be a saving of at least three to four hours. The regulations have been well received by the motor carriers."

"Yes, we are moving our trucks faster. Our time saving should run at least five to 10 per cent."

"Our results have been good so far, and we fully expect them to get better."

Basis for Success

WHILE the time-saved estimates are not spectacular, there is an interesting reason behind this and probably the first point on which the success of any similar plan hangs. The fleets surveyed are big port operators, familiar with pier operation, and most of them already had their own individual working agreements with the piers. Truck fleets doing less business with the piers usually went in on a hit or miss basis. The rules, as adopted, are a modification of the working system of one of the larger fleets. When applied to all trucks, the regulations are, naturally, of greater benefit to former "non-users" than to those who have had successful arrangements in the past. But even the latter expect to attain about a 15 per cent cut in lost time.

This raises the second important point. They are *uniform* "ground rules," apply to all trucks "playing" in the Port of Philadelphia. They are designed to eliminate complaints of "You didn't tell me that" and "How am I supposed to know that?"

Third angle to the plan is that its success depends on cooperation. There are no penalties prescribed in the rules for failure to abide by them. The fleet operator who does not will probably continue to have a high rate of pier delay, however. The piers should obtain better utilization of materials handling equipment, greater traffic flow control and reduced storage time resulting in more space. Truck fleets should benefit by more use of equipment, reduced driver cost and better

(TURN TO PAGE 122, PLEASE)

—and that's a FACT—proved in shops large and small, coast to coast! It's the fastest, most versatile tool a man can use! Cuts nut-running time to a fraction—handles an amazing range of turning jobs! A real muscle saver—just *hold* it—the Wrench does the work—delivers up to 2,000 sharp, powerful rotary blows a minute without twist or hammer shock. The greater the torque load the heavier the blows! Motor runs continuously under all conditions and cannot be stalled or burned out because of overload. Instantly reversible. ½" square drive takes ⅜" to 1 1/16" sockets. 25-foot heavy-duty Neoprene sheathed cord. Many accessory tools available. Ask your Snap-on Man to show you—or write today for new 104-page Snap-on catalog!

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Port "Ground Rules"

Continued from Page 120

service to customers. Since both sides stand to gain, there seems to be no real reason why cooperation will not work.

One truck fleet executive commented on another and less tangible benefit of the rules. Said he, "The pressure is off. There is a greater ease and smoothness in pier pickup and delivery."

National Interest

AT LEAST one other port has already decided to develop a series of operating rules similar to the Philadelphia plan. In announcing that the Port of San Francisco would do so, Port Manager Robert H. Wylie said that the new truck movement system at Philadelphia is "very possibly the precedent for standard traffic rules in all United States ports."

One fleet operator, impressed with the benefits to his operation in Philadelphia, is working to set up similar rules in the port of Baltimore, Md. A other carrier, with headquarters Boston, has requested a copy of t rules for further study. Other grou asking for copies of the "ground rule and further information include:

Hampton Roads Maritime Commi sion, Hampton Roads, Va.

Georgia Ports Authority, Savanna Ga.

New York Port of Embarkatio U. S. Army, New York City.

National Gypsum Co., Buffalo, Ne York.

Esso Standard Oil Co., New Yor City.

Insurance Company of North Ame ica, New York City.

R. C. Williams, Wholesale Groce New York City.

Federal Barge Lines, New Orlean La.

Alaska National Railways, Anchor age, Alaska.

Automotive Transport Assn. of On tario, Ontario, Canada.

Canadian Industrial Traffic Leagu Toronto, Canada.

National Harbors Board, Vancouve B. C.

Copies Available

THOSE looking for miraculous re sults are cautioned that the new rules do not correct (1) present in adequacies of pier and dock facilities (2) needed street improvements fo easier access to docks, and (3) com plexities and red tape of existing cus tom and import/export regulations and procedures.

Copies of the "ground rules" may be obtained from the Philadelphia Chapter, Pennsylvania Motor Truck Assn., Schaaf Bldg., 1505 Race St., Philadelphia 2, Pa., or the Philadelphia Marine Trade Assn., Bourse Bldg., Philadelphia 6, Pa.

END

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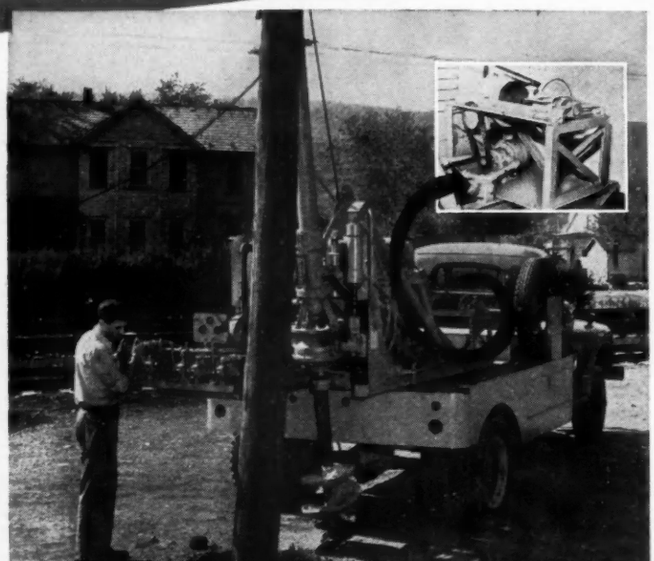
ONE MAN . . . AND A BRADEN WINCH



Pictured here is one man and a BRADEN WINCH doing an efficient job of pole setting. The controls are placed so that the operator can see the pole and keep the load under perfect control. This is another example of the adapting of a BRADEN WINCH to specific handling jobs. Let us know your handling problem and we will show you how a BRADEN WINCH can be used to solve it.

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Something new in buses is this compact 16-passenger unit built by Boyertown Auto Body Works, Boyertown, Pa. It is the first of a fleet to be used by Airways Transportation Co. to carry airline passengers between city airports and downtown Boston hotels. Narrower by 12 in. and almost 10 ft shorter than present 30-passenger units, it will provide faster service in city traffic.

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ZOLLNER MACHINE WORKS **FORT WAYNE, INDIANA**

Training Will Put Out Vehicle Fires

Continued from Page 75

the area wide. Additional air can supply enough oxygen to make the fire flare up. When hood or cargo doors are opened, watch for a sudden flare-up.

● If a vehicle combination is afire, try to separate the tractor from the trailer so as to keep the fire on one vehicle.

● Do not get into a tight corner fighting the fire. Leave room to retreat should the wind change or the flames flare up. Watch for these sudden changes, do not be trapped. Do not crawl under the vehicle, let the extinguisher pressure reach the tight spots.

● If the extinguisher is exhausted before the fire is out, dirt and sand thrown on the fire will help smother it. So will an old blanket or pad. Water might help, but do not forget that *water spreads gasoline fires.*

● When the fire department arrives tell them what the load is, help them fight the fire, but let them take charge. They are specially trained in putting out fires.

Tire Fires

TIRE fires are different from most vehicle fires. They are *hot* fires should be quenched with water. Most vehicle-carried extinguishers do not have the capacity to put one out. Tests made, for example, indicate that a 30-lb dry chemical extinguisher is needed for adequate tire fire protection on tractor-trailer combinations. Compare this to the ICC's dry chemical requirement of 4 lb.

Problem in a tire fire is that the heat causing the fire is inside the tire, resulting from the continuous flexing under load. Many a driver has put one out only to have it burst into flames again.

If a driver finds a hot tire he has two choices: (1) take a chance on reaching a water source before it bursts into flame or (2) stopping until it cools off.

In fighting a tire fire, water should be applied until the tire and wheel are cool enough to touch. As soon as the tire can be handled, take it off and remove it to a location away from the truck. Remember, it may flame up again.

If water is not available, the fire may be smothered with dirt or sand but still must be watched to prevent recurrence.

Fire Extinguishers

FIRE extinguishers are the first line of offense in fighting a truck fire, In most vehicle fires, they can do an effective job when they are of correct type and in operating condition. Whether or not they do that job depends on how well drivers are trained in their use.

In increasing their equipment to meet the revised ICC safety regulations, some fleetmen have taken the smaller capacity units required under the old rules and doubled them up, thus only having to buy new units for half their fleet. This practice is approved in the revised Regulations, but, as a practical matter, the smaller capacity units should not be replaced when they are worn out. When there is a fire to be fought, there may not be enough time to grab and juggle two extinguishers.

The most common models of extinguishers approved under the revised Safety Regulations include: (1) pressure-operated, 4-lb carbon dioxide; (2)

(TURN TO PAGE 126, PLEASE)

GOOD parts..
BAD fluid..
DON'T MIX!
these pistons with heavy deposits on them, were removed from new cylinders in use just a very short time. A few extra pennies per job could have prevented this!
Super 50
Super "40"
Don't let good parts and good work be ruined by bad fluid! Only Brake Fluids formulated by a reputable manufacturer of Brake Parts carries one and the same responsibility—CONTROLLED TOP QUALITY! Don't compromise with "below standard" fluids! If you take pride in your work and your reputation, specify and use EIS—It's worth the extra pennies.
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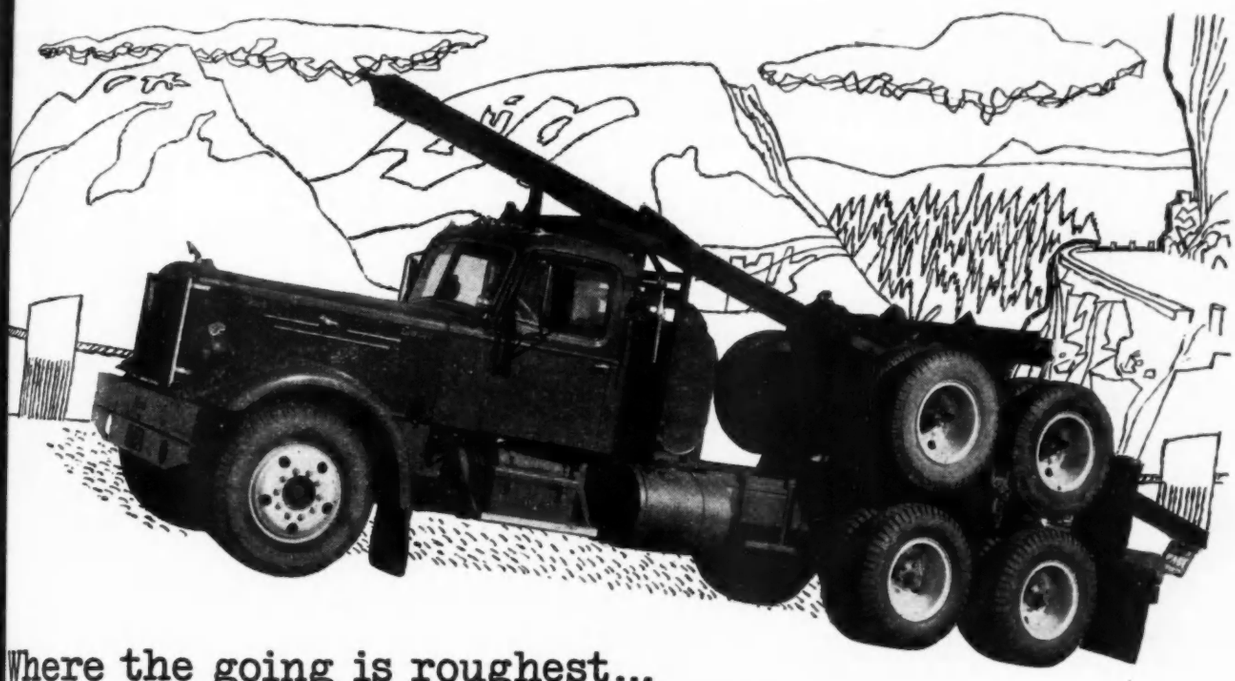


Where the going is roughest... Alcoa Forged Aluminum Disc Wheels!

"In mountain logging," says Earl Raddatz of Fresno, California, "maximum strength is needed throughout the unit. But the wheels must demonstrate superior strength. I have watched other truckers switch from steel to Alcoa Forged Aluminum Disc Wheels* and decided to make the change myself!"

Superior strength is only one of the advantages Earl Raddatz will realize as the miles pile up. Look at these others:

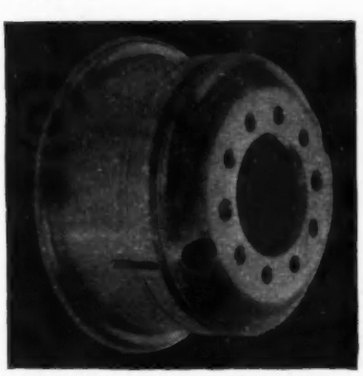
LIGHTWEIGHT! Alcoa Forged Aluminum Disc Wheels weigh 32 to 50 pounds less per wheel than corresponding steel wheels. Savings in unsprung weight mean reduced wear and tear on chassis and tires.

TRUE-RUNNING! Alcoa Forged Aluminum Disc Wheels are precision-made, machined to close tolerances. Results—better balance, truer running qualities that mean easier steering, longer tire life, a smoother ride.

RAPID HEAT DISSIPATION! Tire temperatures are kept lower because one-piece Alcoa Forged Aluminum Wheels conduct heat rapidly away from tires. Tires that run cooler give greater mileage.

MINIMUM MAINTENANCE! Alcoa Forged Aluminum Disc Wheels resist corrosion—never need painting. Tire changing is easier because there is no rust. Rim surfaces remain smooth so tire beads loosen easily during tire changing. Aluminum Company of America, 1871-G Alcoa Building, Pittsburgh 19, Pa.

Forged Disc



Mr. Raddatz purchased his units from Reliable Automotive Co., Fresno, California.

Alcoa Aluminum

ALUMINUM COMPANY OF AMERICA

. . . Vehicle Fires

Continued from Page 124

pressure-operated, 4-lb dry chemical; and (3) pump or pressure-operated, 1½-qt vaporizing liquid. Straight carbon tetrachloride and liquids using carbon tetrachloride or chlorobromomethane as a base are the more usual types of vaporizing liquids. The straight carbon tetrachloride will freeze, but the other liquids are good for minus 50 deg. Carbon dioxide and dry chemical units are also free from freezing.

Pressure operated extinguishers have gages showing available pressure, give a good indication of whether they are ready for use or not. Pump operated extinguishers can be checked by weighing or refilling. Other, and not too accurate ways of checking pump-operated. liquid-filled extinguishers is by trying them or by "swishing" them.

Carbon dioxide and vaporizing liquid extinguisher types leave no residue after the fire is out. Dry chemical extinguisher residue can usually be blown off with compressed air or washed off with water. Be sure, however, that none gets into the carburetor.

An interesting way of being sure fire fighting equipment is available is that used by Associated Transport, Inc., New York City. No equipment is kept permanently in the truck, but a steel kit, 24 by 6 by 6 in., is checked out by

each driver before he begins a trip and back in again at the conclusion of the ride. In the kit are a 1½-qt, pressure-operated carbon tetrachloride extinguisher, three fuses, two red flags and first aid equipment.

Fleet operators are reminded that the ICC Safety Regulations and those of the various states are minimum regulations. Some fleets try to equip their trucks with more adequate fire fighting equipment, such as Consolidated Freightways, Portland, Ore., who have a 1-gal vaporizing liquid extinguisher in each inter-city line haul truck.

After the Fire

MANY a fire has been put out only to be followed by more fire or other damage. To be complete, a driver training program in fire protection must include specific instructions on what to do when the flames have been extinguished. In general, they can be summarized under four headings:

1. Be sure the fire is really out. Spread the debris. Watch for smoke or still smouldering parts, like seat cushions or tires.

2. Protect the vehicle and cargo from further damage or theft. Cover everything you can with a tarpaulin or whatever is available *after the fire is out.* Fire insurance does not cover losses from subsequent rain or pilferage.

3. Stay at the scene of the accident if possible until a representative of the company arrives.

4. If there was only a small fire with little damage, do not start the engine or resume the trip until the *cause* of the fire has been corrected.

In conclusion, remember, few truck fires are put out by the driver with an extinguisher alone. Training in what to do and when to do it is what stops a vehicle fire.

END

Please Resume Reading Page 76

Wherever "Loading" POWER is Needed . . .

WISCONSIN

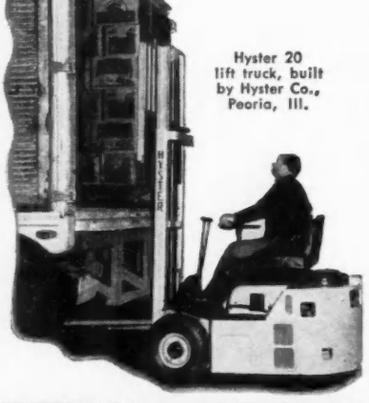
HEAVY-DUTY *Air-Cooled* ENGINES

Fit the Job . . . and the Machine

Goods move swiftly in the warehouse, on the loading platform, in the yard . . . when Wisconsin-powered lift trucks carry the load.

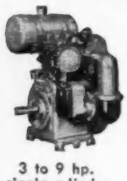
Here is "loading power" and loading efficiency unexcelled in the warehousing and truck transportation field. Dependable AIR-COOLING, heavy-duty construction, compact design, light weight, easy-starting in any weather, uniform power delivery, low cost maintenance and quick availability of original factory parts if and when needed . . . these are some of the factors on which builders and buyers of power equipment bet their money with complete confidence when they specify WISCONSIN POWER.

Whether for warehouse trucking, refrigeration or air-conditioning service, you can't do better than to specify Wisconsin Heavy-Duty Air-Cooled Engines for your equipment. There is a type and size to fit every need within a 3 to 36 hp. range.

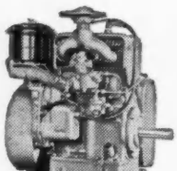


Hyster 20 lift truck, built by Hyster Co., Peoria, Ill.

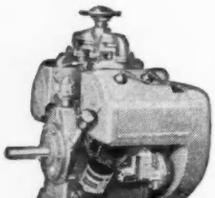
The Truck-Man, built by Truck-Man, Inc., Jackson, Mich.



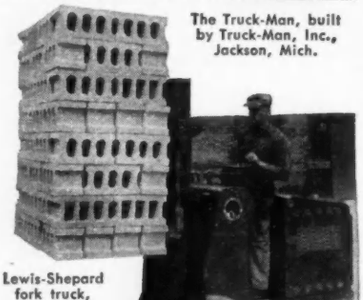
3 to 9 hp. single-cylinder models.



7 to 14½ hp. 2-cylinder models.



15 to 36 hp. V-type 4-cylinder models.



Lewis-Shepard fork truck, built by Lewis-Shepard Products, Inc., Watertown, Mass.

MOST H.P. HOURS

WISCONSIN MOTOR CORPORATION

World's Largest Builders of Heavy-Duty Air-Cooled Engines

MILWAUKEE 46, WISCONSIN

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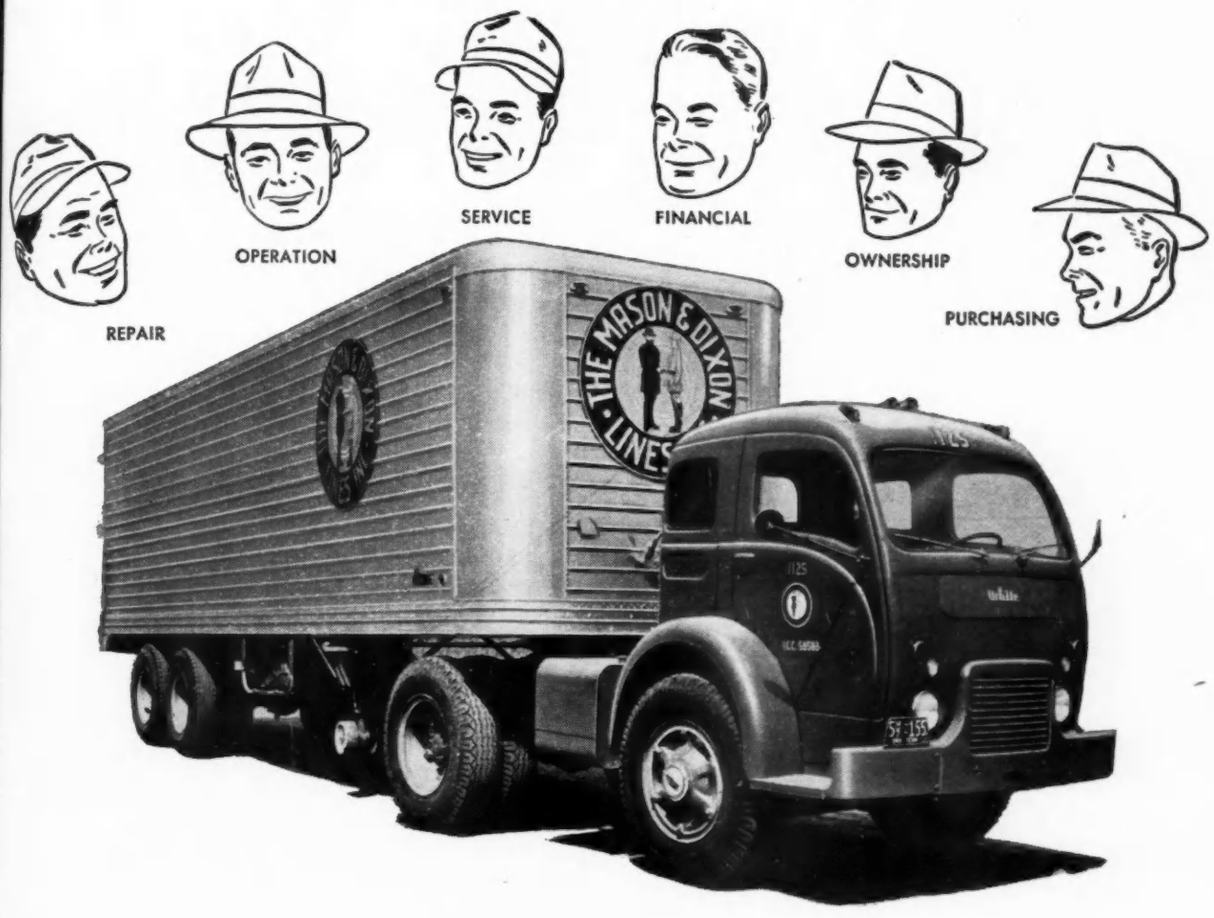

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WHAT phase of trailer operation is your responsibility? From any point of view, it's profits that count. That's why from driver to owner, the swing is to Brown Lightweight Aluminum Trailers — all can see the Bigger Profits in Browns.

Simple arithmetic will show you —

1. How to save 6% on every 20 tons.
2. How to get along with 1 less trailer for every 16 you operate.
3. How the extra payload you can carry with a Brown will cover depreciation, interest and insurance on every trailer that runs 50,000 miles a year.

Just ask your local Brown distributor how to get trailer weights down and payloads and profits up.

✓Lighter Weight
✓Bigger Payloads
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Brown ALUMINUM TRAILERS

Toledo, Spokane, Reading
Distributors in principal cities

"Idiotectonic"—Greek for "Built with a particular purpose in mind"—best describes in one word that Thermo King truck refrigeration units are "factory designed for the job."

Every single part of Thermo King refrigeration units is specially designed and manufactured by, or for, Thermo King, world's largest manufacturer of mechanical truck refrigeration units since 1938.

You'll profit by Thermo King's many other exclusive features backed by 15 years of advanced leadership in the transport refrigeration field.

THERMO KING
TRANSPORT REFRIGERATION UNITS

EXCLUSIVES!!

- Combination starter-generator. Stop-start engine operation.
- Fully automatic hot-gas defrost.
- Counter-flow cooling coil.
- Uni-Pak—Single package unit.
- Nation-wide, Factory Trained Service.

U. S. THERMO CONTROL CO.

World's Largest Builder of Gasoline Engine Powered Refrigeration Units.

Sales and Service in All Principal Cities

MAIL THIS COUPON TODAY

U. S. Thermo Control Co.
44 South 12th St., Minneapolis 3, Minn.

Gentlemen: Please send immediately complete information regarding Thermo King mechanical Refrigeration for trucks and trailers.

Firm _____

Address _____

City _____ Zone _____ State _____

Bartlett Announces New Light Weight Dump Trailer

NOSE mounted hoists and increased use of aluminum are major weight saving features of a new tandem-axle, lightweight dump trailer just announced by Bartlett Trailer Co., Chicago.

The new forward mounted lifting mechanism has eliminated the need for heavy frame and body structure formerly needed when the hoist was mounted in the center of the chassis.

In addition the body has been constructed of aluminum and steel to obtain a minimum weight consistent with required strength and trailer life. Sides and floor are aluminum.

Another advantage claimed for the nose-mounted lift is that it reduces the oil pressure needed to lift the body. In the new model, one hose connection will lift the body about 18 ft or 50 deg.

The unit illustrated is designed for a 38,000 lb payload, but the new model is available in a full range of capacities.

Other features include:

Reduced maintenance on the cylinders and packing glands because of the reduced operating pressures.

Lifting cylinders have been enclosed to stop sand and gravel from granulating them.

Lower load height and longer body length reduces curve tipping at high speeds.

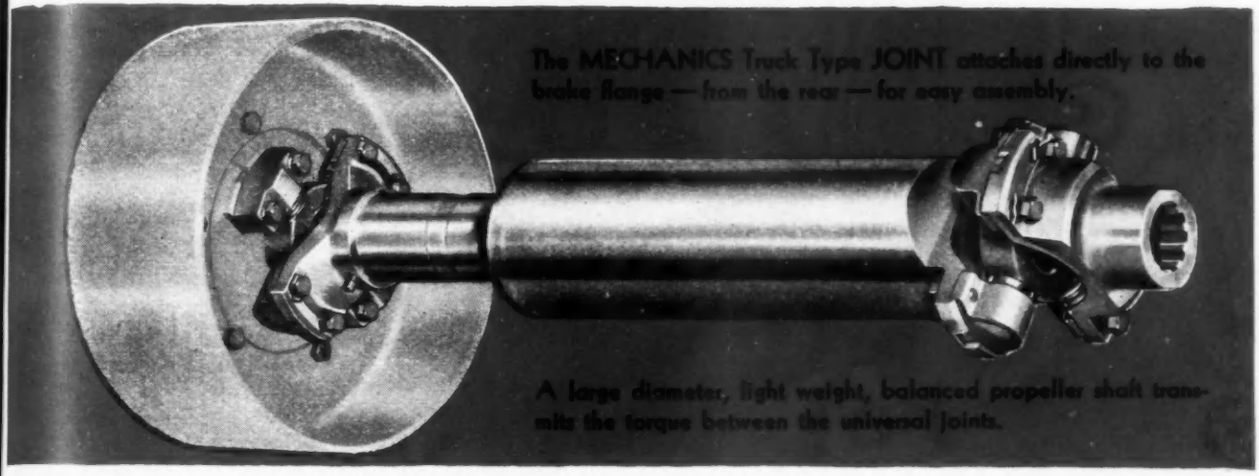
Low rear hinge pin to eliminate side tipping when body is lifted high.

Tandem suspension is of the "no maintenance" type, said not to require greasing or yearly maintenance.

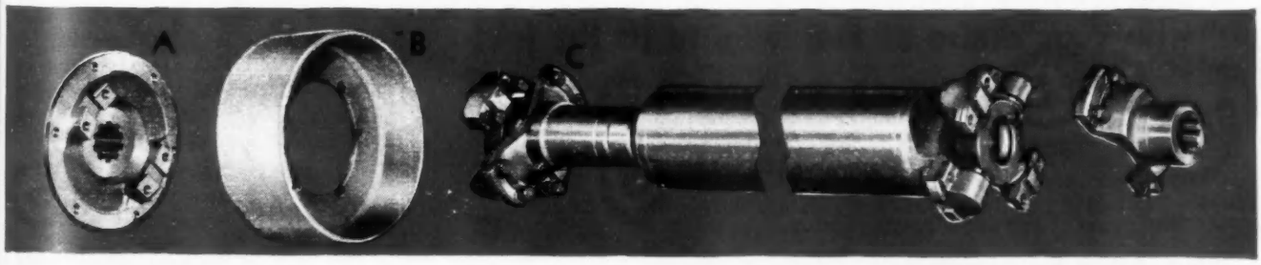
Two-speed, hydraulic operated, landing gear is included to support the trailer when not in use.

ALL Universal Joints — Are NOT Alike

MECHANICS Roller Bearing UNIVERSAL JOINTS for Trucks are specially designed with less parts and connections for *easy assembly and servicing — smooth running balance — Maximum strength* with *less weight* — and *long, trouble-free, safe operation.*


The MECHANICS Truck Type JOINT attaches directly to the brake flange — from the rear — for easy assembly.
A large diameter, light weight, balanced propeller shaft transmits the torque between the universal joints.

MECHANICS Truck Type JOINTS are assembled by attaching joint C to brake flange A independent of fastening between drum B and flange A; making possible servicing drum or joint, without disturbing other attachments or altering original brake drum or propeller shaft balance.



Let MECHANICS engineers help give *your* trucks or other heavy duty machines these competitive advantages.

MECHANICS UNIVERSAL JOINT DIVISION
Borg-Warner • 2034 Harrison Avenue, Rockford, Illinois

MECHANICS
Roller Bearing BW
UNIVERSAL JOINTS

For Cars • Trucks • Tractors • Farm Implements • Road Machinery • Aircraft • Tanks • Busses and Industrial Equipment

"TAILOR MADE" FOR EVERY JOB

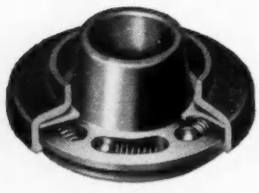
TOLEDO VALVES

are your guarantee of customer satisfaction

Widest valve coverage in the business with your choice of the valve to fit the job!

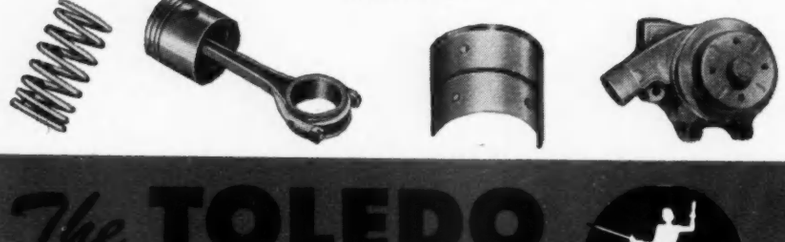
For every job that comes into your shop there's a Toledo Valve "tailor-made" to give the utmost in efficiency and durability. *Toledo Superforged Valves*—the standard for long wear at minimum cost—will answer the bulk of your needs. *Toledo Aerotype Valves*—for the most rugged heavy duty. *Toledo Sodium-cooled Valves*—specially designed for fast heat dissipation, the coolest running, longest-lasting valve made.

Take advantage of Toledo's 47 years of leadership—install Toledo "tailor-made" valves for greater customer satisfaction.



Get up to 5 times longer service with valve rotation!

Valve rotation is a thoroughly proven means to longer valve life. Toledo's coverage in both positive rotation (Rotocaps) and non-positive rotation (Roto-valves) gives you maximum sales opportunities.



The TOLEDO STEEL PRODUCTS COMPANY
TOLEDO, OHIO
Division of Thompson Products, Inc.
Since 1906—World's Finest Automotive Parts

TOLEDO

Plastic Lined Reefer

Continued from Page 96

axle reefer trailers with similar insulation and mechanical refrigeration which scale between 14,455 and 15,860 lb. Still greater weight saving could be expected over comparable tandem-axle units.

Inside dimensions of the new trailers are: length—32 ft 1 in.; height—77 in.; and width—78 in. Outside they are 33 ft long and 8 ft wide.

Other advantages claimed for the liner, a polyester fiber glass laminate, are:

It does not absorb or transfer odors, can be hosed or steamed out quickly.

It does not corrode, delaminate or separate.

Its moisture absorption is negligible, with resulting long life.

It is resistant to scraping and has an elasticity permitting it to "bounce" back when bumped by cargo.

Vertical corrugations are molded in the liner, eliminate the need for adding cargo spacers to provide for necessary cold air circulation.

It is a non-conducting, insulating material itself.

Repairing of cracks or holes in the plastic liner caused by severe blows from cargo or handling equipment can be made in the fleet's own shop. First step is to clean the area around the damage and cut out the damaged portion. Then take a piece of fiber glass insulation, cut to fit the resulting hole, impregnate it with resin and put it in place. Cover this with cellophane. Take a piece of aluminum sheet that has been shaped to fit the corrugations in the liner and brace this against the patch. Only enough pressure to hold the patch snug is needed; it takes about a half hour to set. The aluminum cover can then be removed and the patch area sanded smooth, ready for use.

One-Piece Door Liner

SPECIAL feature of the new trailer is the one-piece, molded door liner. Corrugated and made of the same plastic as the wall liner, the interior door pan is a continuous piece, contacting the aluminum exterior all around the door's perimeter.

This construction eliminates much of the heat loss of more conventional type doors using metal rivets, bolts and fittings. The plastic liner does not warp, shrink or swell, giving the door an accurate fit. The door frame is also plastic faced. Two rubber air seals around the door complete the protection against heat loss.

Three types of floor are available. An extruded aluminum, corrugated floor is

ecommended for drainage and circulation. A sheet aluminum or flat extruded aluminum floor is also available. Both of these floors are tank type floors, have vertical aluminum sides to prevent water seeping into the insulation. There is no metallic contact between floor and metal framing or exterior of trailer thus minimizing loss of refrigeration.

The inside "tank" floor is supported on wooden stringers. A sealed plywood subfloor under the insulation completes the job.

When very low temperatures are not required, a double wood floor with vapor barrier between layers is available.

Other Features

THE trailers are of exterior post construction. All roof and side joints in the aluminum skin are sealed with an aircraft-type sealer.

They can be constructed to maintain temperatures required for transportation of refrigerated commodities in line with U. S. Department of Agriculture recommendations. The units as delivered to Needham's will handle ice cream which has a maximum recommendation of 0 deg and a minimum recommendation of minus 10 deg, one of the lowest.

Strick reports that tests show the new trailer is able to maintain operating temperatures with the refrigerating equipment running only 75 per cent of the time required in other units.

END

Please Resume Reading Page 98

1-Ton Lumber Truck

This unique island-type truck with one-man cab was specially built on a 1-ton Dodge truck chassis by Oregon City Lumber Co., Oregon City, Ore., to obtain 32-in floor height for easy loading and 20-ft body platform length to deliver long lumber and other building materials. One man now does with ease the work formerly done by two in loading and unloading miscellaneous materials such as cement, long lumber, ladders, tile, and roofing. Three trucks of this type are being used by the company, and similar trucks are planned for the firm's three other yards. Platform and cab are locally built with 20 ft of loading space alongside the cab and 12 ft back of it. Stake pockets permit materials to be stacked with the stakes removable for unloading.

TO KEEP 'EM ROLLING

TOLEDO MOTOR AND CHASSIS PARTS

GET IT FROM YOUR JOBBER

REPAIRMAN

Toledo parts save installation time because they fit better. They give a better-running, longer-lasting repair job. These benefits mean greater customer satisfaction.

FLEET OWNER

Toledo heavy duty parts give me a better performance picture. Toledo parts wear longer, cut maintenance costs, keep vehicles rolling with less time out for repairs.

TRACTOR OPERATOR

Toledo heavy duty parts are always dependable, longer-lasting. They are first choice with me because they help keep down operating costs.

Toledo motor and chassis parts will be first choice with you too, once you have experienced their all-round superiority. Investigate the advantages of the complete Toledo line. See your Toledo jobber today, or write

The TOLEDO STEEL PRODUCTS COMPANY
TOLEDO, OHIO
Division of Thompson Products, Inc.
Since 1905—World's Finest Automotive Parts

Better Accident Investigation

Continued from Page 71

and many Detroit truck fleets. His knowledge of traffic laws and good driving technique immeasurably strengthens our board.

The five members mentioned above are the voting members of the board. The safety director's role is to preside over the meeting, to read aloud reports of accidents made by drivers, to record the findings of the review board as they sit in judgment and, later, to follow up the board's findings with the proper disciplinary action if the driver is proved guilty.

But the safety director *has no vote* and therefore does no judging of the driver concerned in the accident.

Under the new judging system we find that drivers' reports contain much more pertinent information than ever before. Now that five driving experts are sitting in judgment on their cases, drivers feel, rightly, that the more detail they give in their reports, the more fairly and objectively their accidents can be judged.

We also find that drivers tend to be scrupulously honest in their reporting because a member of the board is a representative of the insurance underwriters. Drivers know that, when necessary, the insurance company will check upon accidents themselves and will eventually disclose any dishonesty or lie, the penalty for which is immediate discharge.

After thorough consideration and often after open discussion of all data relative to the accident, board members vote by ballot (Fig. 1.). It is at this point that a further step in achieving impartiality in judging cases is obtained, for all reports of all accidents are given a file number. The driver's name is never mentioned or seen by the board members. Thus, in passing judgment they are not voting upon a person but upon a file number. All accidents, incidentally, are numbered consecutively. None of the ballots are ever signed by the board members so neither driver nor safety director ever knows which way a member voted.

Driver Has Right to Appeal

IN FOLLOWING up the board's findings the safety and personnel department uses a form letter to notify the driver of the board's findings (Fig. 2). However, the driver found guilty still has 15 days in which to file a written appeal. Appeals are rarely filed in open and shut cases, incidentally, but usually in the border line cases or in cases where the driver turns up new evidence in favor of himself. Previously no appeal was allowed.

Guilty drivers are open to disciplinary action depending upon their degree of guilt. This degree of guilt must be established by the board members in marking their ballot and this is what the four squares printed upon the ballot are for. Each square is lettered "A, B, C or D" with each of these classifications standing for a certain degree of guilt or innocence.

As a guide to voting, all board members are furnished with a copy of our Traffic Accident Classification form which very clearly divides all accidents into the four classifications mentioned above with a specific explanation made as to what each classification entails.

Class A—Includes all accidents in which the vehicle is standing still, parked at a curb or in any other position where it has a legal right to be,

(TURN TO PAGE 134, PLEASE)

ARE DRIVERS "RAILROADING" YOUR VEHICLES?

Handy Governors Will Stop It

Any driver is likely to be less than meticulous in his care of a vehicle he doesn't own. Many feel no compunction about "railroading" your vehicles. Drivers do most of their work away from supervision . . . abuses are hard to correct.

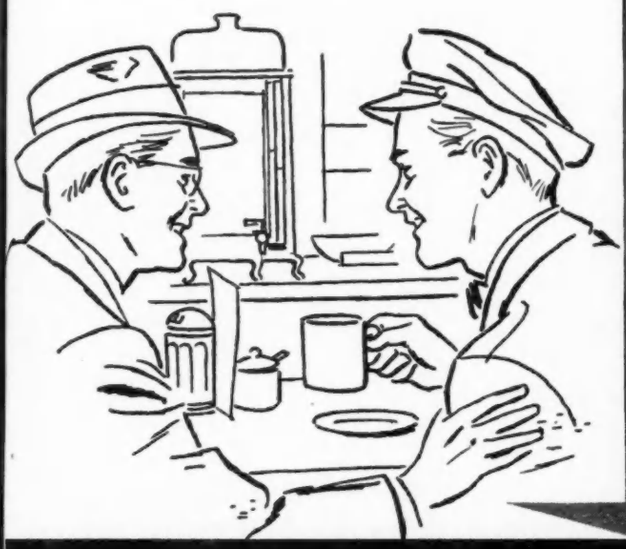
Handy Governor will stop "railroading" —stop practices which run up costs and wear out vehicles before their time.

The savings in tire, fuel, and lubricant costs, engine repairs, brake maintenance and general maintenance are spectacular. Reduced accident and insurance costs are equally important.

Let us show you some figures on savings — and tell you how little it costs to get them.

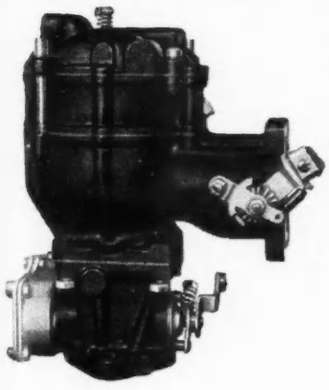
KING-SEELEY CORPORATION
ANN ARBOR, MICHIGAN
PLANTS AT
ANN ARBOR, SCIO,
YPSILANTI

Does He Knock or Boost Your Truck?



IT ALL DEPENDS ON PERFORMANCE and PERFORMANCE DEPENDS ON

Zenith CARBURETORS



What drivers and operators say about your vehicles has a mighty important bearing on the future of your business. So it is imperative that every component be selected on the basis of its contribution to lasting, satisfactory performance. In the field of heavy duty carburetion Zenith* has long been recognized as the engineer's choice for quality performance under all operating conditions. You can be sure that manufacturers whose vehicles are Zenith equipped measure carburetor costs in lasting terms rather than initial expense. Zenith's rugged construction, strong idling, freedom from stalling and obedient response to every power demand goes a long way toward building owner good will. That's why cost conscious operators and experienced drivers prefer Zenith equipped vehicles.

*REG. U.S. PAT. OFF.

ZENITH CARBURETOR DIVISION OF Bendix AVIATION CORPORATION

696 Hart Avenue · Detroit 14, Michigan

Export Sales: Bendix International Division, 205 East 42nd Street, New York 17, N. Y.

. . . Accident Investigation

Continued from Page 132

rear end collisions in which other cars run into the rear of our truck while it is standing still, all other cases under similar circumstances but excluding accidents in which the vehicle is in motion. This class includes all cases where the review board members hold the drivers blameless beyond doubt.

Class B—Includes accidents in which the vehicle is in motion but where it is decided the driver could exercise no preventative action.

Class C—Includes accidents in which the blame was evenly divided or where the chief responsibility rested with a person or persons other than the driver. This class includes all cases in which it is believed the driver failed to exercise preventative measures within his control.

Class D—Includes all cases in which it is decided that the responsibility rested chiefly or wholly upon the driver, including violations of traffic regulations and company instructions, unsafe or discourteous conduct, horseplay or other acts of similar character.

Thorough Selection Plan

OF COURSE there is more to safet work than merely judging acc dents. We take certain precautions ca culated to prevent accidents in so fa as we are able, particularly when hirin new drivers. Before placing a drive permanently we try to know all there i to know about him just to make sur he is the type we want.

When hiring we hold the usual pre liminary interview for experience, abil ity and past accident record. The driver next takes the Siebrecht aptitude test and is then given a yard drivin test under the close regard of our oldes and best city driver.

Passing these tests successfully th applicant is next placed on a 30-da probationary period during which tim we really get acquainted with him. Tes ing his driving technique further w give him a real road test in the compan of an old driver who surrenders a wri ten report on him. The test course i half way to Chicago and back. Thi report is thorough and provides us wit an excellent picture of his drivin technique.

As much as we are interested in th applicant as a driver we are just a interested in him as a reliable, honest and trustworthy employee. To ascer tain this the first thing we do is em ploy an outside agency to make a con fidential character report on the new driver. This we get within 20 days, o 10 days before the 30-day probation period expires. This confidential report gives us a complete picture of the driver's character, his earnings, hi financial habits, his weaknesses, such as drinking, and a mass of other perti nent data.

The second report we get on the new driver comes to through the managers of our various terminals found through out the country. For this purpose we mail our terminal managers a form (Fig. 3) which states that the driver is on a 30-day trial basis and asks for a report as indicated.

Better Mechanical Checks

HAVING qualified the new driver thoroughly, and having set up an impartial system for judging accidents, we also have done much to improve the mechanical condition of the vehicles. Foremost is an inspection lane where both before and after road trip checks are made.

The inspection lane is open at both ends, is roofed and forms one section of our repair garage. It is floodlighted, equipped with a battery charger, compressed air outlets for tire inflation.

(TURN TO PAGE 136, PLEASE)

KEEPS TIRES AIRTIGHT AT HIGH TEMPERATURES

HI-TEMP Heat-Resisting VALVE INSIDES AND CAPS BY DILL

PREVENTS COSTLY ROAD DELAYS . . . CUTS TIRE WEAR AND EXPENSE . . .

Do you have tire pressure maintenance troubles caused by excessive tire heat? Equipping your tire valves with Dill HI-TEMPS will end this difficulty.

Under abnormal hot tire temperatures, even up to 300° F. and more, the heat-resisting air seals of Dill HI-TEMP valve insides and caps maintain airtight security, without sticking.

Tire engineers and fleet owners, everywhere, acclaim this modern Dill development. Dill HI-TEMPS will prevent costly road delays for you, cut tire wear and mileage expense. Buy this money-saving equipment from your wholesaler, tire or oil company, today.

THE DILL MANUFACTURING COMPANY
700 East 82nd Street
CLEVELAND 3, OHIO

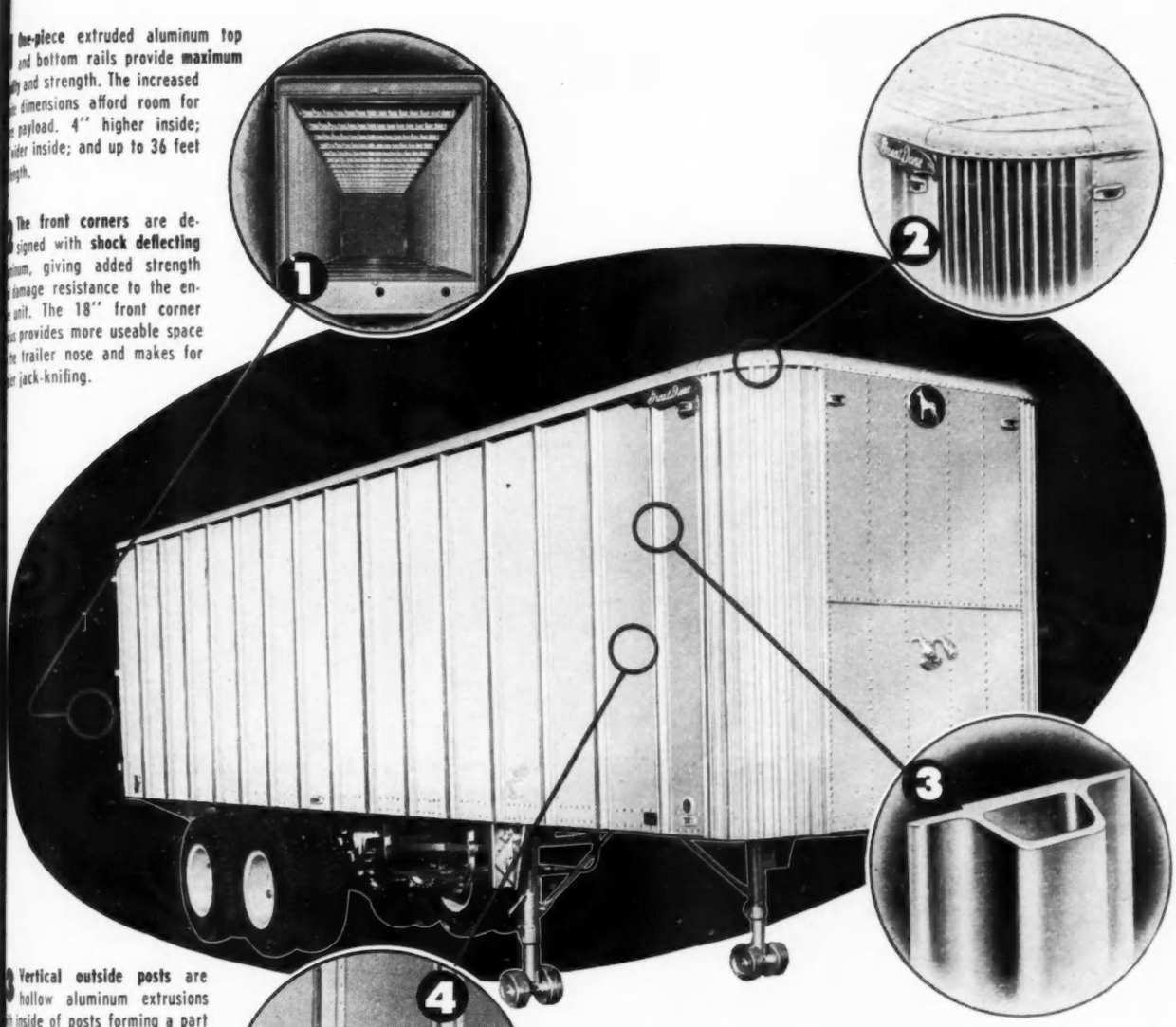
No. 100-AH Valve inside with special heat-resisting rubber seal in cup and on barrel.

No. 632 Dome-type valve cap with swivel gasket of special heat-resisting rubber.

No. 631 Hexagon-type valve cap with lead gasket mounted over brass sleeve.

ORDER from your Wholesaler, tire or oil company.

DILL TIRE VALVE EQUIPMENT
Standard of the Tire Industry



1 **One-piece** extruded aluminum top and bottom rails provide **maximum** rigidity and strength. The increased door dimensions afford room for more payload. 4" higher inside; 2" wider inside; and up to 36 feet longer.

2 **The front corners** are designed with **shock deflecting** aluminum, giving added strength and damage resistance to the entire unit. The 18" front corner radius provides more useable space on the trailer nose and makes for easier jack-knifing.

3 **Vertical outside posts** are hollow aluminum extrusions with inside of posts forming a part of **smooth inside wall.** These extruded strength members relieve the strain in side sheets and continue to carry the load even though the side sheets may be torn away.

4 **Side sheets** fit between the posts, requiring only two rows of rivets to replace them. All aluminum construction in roof, doors and nose.

get an extra-rugged, extra-cargo trailer of weight-saving extruded aluminum construction in Great Dane's

NEW CARGO CRUISER

Lighter yet stronger, the Cargo Cruiser is a combination of functional design and advanced construction. It features the new vertical hollow extruded aluminum posts placed on the *outside* of the side wall panels. Other important, exclusive points mark the Cargo Cruiser as the finest unit on the road. For complete details ask for a specification sheet and folder on Great Dane's new champion!

GREAT DANE Trailers

SAVANNAH, GEORGIA

Over the Long Haul, Great Dane has ALL THE FEATURES

. . . Accident Investigation

Continued from Page 134

and has a man on duty 24 hours a day.

For this inspection we designed and printed a number of "Equipment Inspection" forms (Fig. 4). It will be noted that this form covers salient safety points and gives us a running inventory of all tires on equipment.

Road Patrols

WE DO another thing calculated to eliminate accidents and to keep drivers on their toes. Either the safety director or an assistant spend much time on road checking driving practices. We leave the terminal some time after the truck we wish to check upon has left.

We criticize drivers caught on the road guilty of bad driving. On the other hand we have stopped a driver and praised him, something that does no harm at all. The only time we fired a driver on the spot was in the case of the driver who picked up a passenger and let him do the driving.

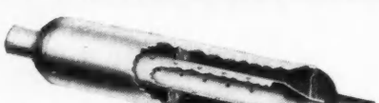
END

Please Resume Reading Page 72

Mileage Proved!

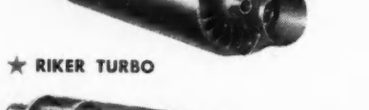
RIKER

Heavy Duty TRUCK and BUS MUFFLERS



★ RIKER JET

★ RIKER TURBO



★ RIKER "QT"

Three, mileage proved, heavy duty mufflers—the Riker Jet, Turbo Jet, and the "QT" (Quiet Tone), offer a choice for truck and bus installation that have received acceptance throughout the entire country. *Proved by leading truck manufacturers on original equipment.* You can be sure of longer life, lower operating cost, *and better public relations,* where you specify, and install, Riker Mufflers.

In addition, Riker offers dual exhaust conversion kits for Ford F-7 and F-8 trucks. Save gas . . . save manifolds . . . save valves.

ASK YOUR JOBBER

—for literature and prices on Riker Mufflers and accessories for complete exhaust systems.

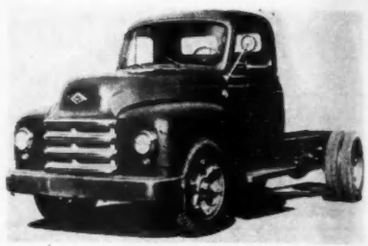
RIKER MANUFACTURING
4809 DETROIT AVE., TOLEDO 12, OHIO

DESIGNERS • ENGINEERS • MANUFACTURERS
HEAVY DUTY *MUFFLERS* EXCLUSIVELY

One and a Half Ton Diamond T

TWO new model trucks with overhead valve engines have been announced by Diamond T Motor Car Co., Chicago. The Model No. 323 is rated at 14,000 to 16,000 lb GVW and the Model No. 422 is rated at 16,100 to 21,000 lb GVW. Illustrated above is the Model No. 323.

Power-plant in the Model No. 323 is the company's Model No. 252 overhead-valve, six cyl engine with side-draft carburetor and intake manifold enclosed in the head. Bore and stroke are 3½ x 4⅜ in., with piston displacement of 252.6 cu in. Maximum torque is 216 lb ft. and the engine develops 113 bhp at 3600 rpm.



Transmission is the Warner No. T98 heavy-duty four-speed synchro-mesh, with helical gears providing exceptional ease of handling and quiet operation. Main and counter shafts carried in ball and roller bearings. The Clark R-1000 full-floating hypoid-bevel rear axle is standard, with one-piece forged steel housing and pinion straddle-mounted on three rows of bearings. The Eaton 1350 Series two-speed axle is also available as optional equipment. Brakes are latest type Wagner hydraulic, with two operating cylinders at each wheel and heavy duty molded lining.

Model 323 is offered in six wheelbases, from 130 to 172 in. for bodies from 8 to 15 ft in length, and a special 190-in. wheelbase for school bus bodies of 48-passenger capacity.

Model No. 422

THE companion Model No. 422 is generally similar in appearance and specifications. Engine is the heavy-duty Continental K-6271, with bore and stroke of 3⅝ x 4⅜ in. and piston displacement of 271 cu in. Maximum torque is 216 lb ft and this engine develops 112 bhp at 3000 rpm.

A feature of Model No. 422 is provision for both single-speed and two-speed oversize rear axles to carry 9.00-20 dual tires for maximum loads or severe operating conditions.

CHEVROLET ADVANCE-DESIGN TRUCKS

More work per dollar . . . and here are 4 powerful reasons why!

MORE POWER AT LOWER COST! Watch costs go down when you put the new heavy-duty power of Chevrolet's advanced Loadmaster engine to work! The new high-compression ratio of 7.1 to 1 in this great engine brings you more power and even greater economy than before. Chevrolet's Thriftmaster engine, too, in light- and medium-duty models offers exceptional economy of operation.

FACTORY-MATCHED TO THE JOB! Some jobs demand more power. Some demand stronger springs. But, *whatever* the requirements of your job, Chevrolet trucks are carefully *factory-matched* to the work to be done, with the *right* power—and the *right* units from tires to axle, springs to clutch—to handle that work at lowest cost.

MORE RUGGED THAN EVER! There is extra economy, too, in the exceptional stamina of Chevrolet trucks. You can expect new ruggedness and strength with heavier, more rigid frames and brawnier construction throughout. You can expect extra miles added to the life of your truck, plus a substantial reduction in the over-all cost of hauling.

LOWEST PRICED LINE! Chevrolet trucks are known for qualities and features matched by no other trucks. Yet, with all these advantages, the Chevrolet line lists for less than any other trucks of comparable size and specifications. See your Chevrolet dealer. Chevrolet Division of General Motors, Detroit 2, Michigan.

CHEVROLET ADVANCE-DESIGN TRUCK FEATURES

TWO GREAT VALVE-IN-HEAD ENGINES—the Loadmaster or the Thriftmaster—to give you greater power per gallon, lower cost per load. **POWER-JET CARBURETOR**—for smooth, quick acceleration response. **DIAPHRAGM SPRING CLUTCH**—for easy-action engagement. **SYNCHRO-MESH TRANSMISSION**—for fast, smooth shifting. **HYPOID REAR AXLE**—for dependability and long life. **TORQUE-ACTION BRAKES**—on light-duty and medium-duty models and on front of heavy-duty models. **TWIN-ACTION REAR BRAKES**—on heavy-duty models. **DUAL-SHOE PARKING BRAKE**—for greater holding ability on heavy-duty models. **CAB SEAT**—with double deck springs for complete riding comfort. **VENTIPANES**—for improved cab ventilation. **WIDE-BASE WHEELS**—for increased tire mileage. **BALL-GEAR STEERING**—for easier handling. **UNIT-DESIGNED BODIES**—for greater load protection. **ADVANCE-DESIGN STYLING**—for increased comfort and modern appearance.

CHEVROLET
first in demand
in value
in sales

Arrow BULB and FUSE CONTAINER

Specifically designed to help you comply with ICC Regulation 193.95 (b) and (c)

Holds 8 fuses, 16 spare bulbs and 1 sealed beam unit in a foam rubber mounting that insulates against shock and vibration. Unique tapered shape makes container easy to handle, wedges sealed-beam unit tight, makes it easier to insert and remove bulbs. At your jobber's now.

N175 Bulb and Fuse Container. Height only 5 3/8". Diameter at widest point only 7 3/16". Baked on black enamel finish.

ASK YOUR JOBBER FOR ARROW PRODUCTS . . . *THEY'RE THE BEST*

39 Streamlined Marker Light

217-0 Reflector, with shatterproof plastic lens

N235 Automatic Cancelling Directional Signal Switch built for trucks and buses

N128 Magnalite Double-Faced Class "A" Signal

See the complete line of Arrow Safety After Dark Equipment. Get a free Arrow catalog from your jobber today.

ARROW

SAFETY AFTER DARK

Arrow Safety Device Company
Mt. Holly, New Jersey

SAE Summer Meeting

Continued from Page 98

heavier trucks is feasible, he said. Top speeds remain the same as in a conventional unit, he stated, and the Hydra-Matic having lower gear ratios available has better gradability. He mentioned such advantages as improved driving ease, reduced maintenance of the power train, better control on ice, snow or mud.

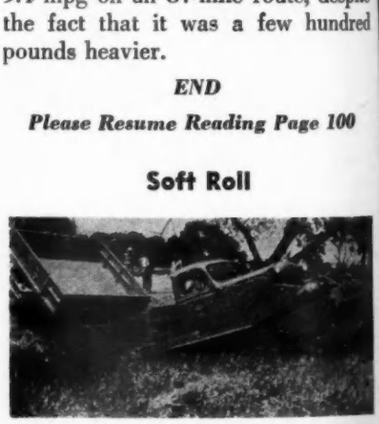
An interesting contribution was made by R. M. Werner, United Parcel Service. Mr. Werner is strong in his conviction that the operator of light vehicles in stop and start service requires either fluid drive or a torque converter to reduce maintenance expense.

He is now field testing one vehicle in multi-stop delivery, in service where vehicles are covering approximately 90 miles a day. In a recent test period six comparable route cars, equipped with conventional 3-speed transmissions, covering about 90 miles a day, averaged just around 9 mpg fuel economy. The Hydra-matic-equipped route car averaged 9.4 mpg on an 87-mile route, despite the fact that it was a few hundred pounds heavier.

END

Please Resume Reading Page 100

Soft Roll



Successful trial runs of a new tricycle type "Rolligon" tractor and trailer constructed for the Army Transportation Corps have been announced by the Goodyear Tire and Rubber Co., Akron, Ohio. Utilizing a standard Dodge "Power Wagon" cab, engine and modified transmission components mounted on three Rolligon balloons or "tireless tubes," the power tractor pulls a trailer rolling on two of the huge melon shaped "tires." This is the first practical application of the "Rolligon" principle to a commercial vehicle. The "Rolligons" are 60 in. long and 42 in. in diameter, have a tread thickness of only 3/16-in. and operate at low pressures of three to five lb per sq in. They are held in position by an axle, but are driven by a series of rotating rollers on the underside of the vehicle.

Our Savings Were Like "Striking Oil!"

"Out here in the oil fields, tires take a licking. It's rough going every day—but we have to be on the job around the clock.

"I was having considerable trouble with wheel failures, and what I considered excessive tire costs, until I called in Harry Morgan of Southwest Wheel and Equipment Company, Budd distributors here in Houston.

"After a survey of my rigs, it was recommended that I change over to 10-hole, wide base wheels with a taper under the bead seats. We put on Budd wheels Nos. 59300 and 49260, with 10:00x20 tires. We did this on every piece of equipment as quickly as possible. And I made it a rule that all new trucks purchased must be equipped with the same wheels.

"Now I find my tires running cool, and that these new wheels provide protective alignment in every operation.

"I don't often go out on a limb to recommend anything to the other fellow. But my experience with the proper Budd steel disc wheels on my trucks makes me feel sure that you, too, may profit by a survey of your equipment by a qualified Budd distributor."

W. O. Bailey

Bailey Transportation Company

THE BUDD COMPANY, DETROIT 15

Budd

LOS ANGELES—Wheel Industries, Inc.
LOUISVILLE—Auto Wheel & Rim Service
LUBBOCK—Southwest Wheel, Inc.
MEMPHIS—Beller Wheel, Brake & Supply Co.
MILWAUKEE—Stone Manufacturing Co.
MOLINE—Mutual Wheel Co.
NASHVILLE—Beller Wheel, Brake & Supply Co.
NEWARK—Automotive Safety Inc.
NEW HAVEN—Connecticut Wheel & Rim Co.
NEW ORLEANS—Southern Wheel & Rim Co.
NEW YORK—Wheels, Incorporated
OKLAHOMA CITY—Southwest Wheels, Inc.
OMAHA—Morgan Wheel & Equipment Co., Inc.
PEORIA—Peoria Wheel & Rim Co.
PHILADELPHIA—Thomas Wheel & Rim Co., Inc.
PITTSBURGH—Wheel & Rim Sales Co.
PORTLAND—Six Robblees', Inc.
PROVIDENCE—New England Wheel & Rim Company
RALEIGH—Carolina Rim & Wheel Co.
RICHMOND—Dixie Wheel Co., Inc.
ROCHESTER—Frey, the Wheelman, Inc.
SALT LAKE CITY—Henderson Rim & Wheel Service
SAN ANTONIO—Southwest Wheel & Equipment Co.
SAN FRANCISCO—Wheel Industries, Inc.
SEATTLE—Six Robblees', Inc.
SOUTH BEND—Wire & Disc Wheel Sales & Service
SPOKANE—Bearing & Rim Supply Co.
SPRINGFIELD, ILL.—Illinois Wheel & Brake Co.
SPRINGFIELD, MO.—Borbein, Young & Co.
ST. LOUIS—Borbein, Young & Co.
ST. PAUL—Wheel Service Co.
SYRACUSE—Colbourn Wheel & Rim Service, Inc.
TACOMA—Six Robblees', Inc.
TOLEDO—Wheel & Rim Sales Co.
WICHITA—Borbein, Young & Co.
WINSTON-SALEM—United-Automotive Service

EXPORT

CLEVELAND—C. O. Brandes, Inc.

CANADA

CALGARY—Mutual Supplies, Ltd.
EDMONTON—Alberta Wheel Distributors, Ltd.
MONTREAL—Auto Wheels & Supplies, Ltd.
TORONTO—Wheel & Rim Co. of Canada, Ltd.
VANCOUVER—Wheels & Equipment, Ltd.
WINNIPEG—Ft. Garry Tire Service Ltd.

. . . Size and Weight Restrictions

Continued from Page 69

The public certainly will not benefit if through under-construction and under-maintenance our roads and bridges are permitted to go to pieces any more than if in the mistaken effort to preserve them, trucks are so restricted that the nation's transportation bill is increased far beyond what a sound and realistic highway program would cost. The salvation of our declining highway system is not in hobbling highway hauling, but rather in building and maintaining roads adequate for the economic demands of modern transportation.

Good roads pay for themselves. Better proof of this can hardly be found than in the record of the wholly self-sustaining Pennsylvania Turnpike, whose chief source of revenue is the heavy trucks, whose operators find that the economies realized from its use more than justify the tolls which they pay. This in spite of the fact that they also pay heavy special taxes for the support of public roads.

Demands on the Highway

WE HAVE been told that axle loading beyond 18,000 lb will break down many existing pavements and that to build roads of greater weight capacity will increase their cost. Yet, throughout those regions where greater axle loading is permitted, we have roads of the minimum standard which have been successfully carrying legal axle loads of from 19,000 to 22,400 for a great many years. We have also seen many instances of roads which have gone to pieces although never traversed by any but passenger vehicles.

When we get all through examining the flimsy arguments for the arbitrary 18,000-lb axle load limit, we are met with the further generality that to build roads capable of sustaining greater weight concentrations will involve higher cost and that this higher cost will be for the benefit of a minority of all of the trucks operating.

Let's look at this matter of cost. In 12 Eastern states, axle loads of 20,000 lb or more are permitted and have been for many years. Have their highway costs been out of proportion with those of the other states?

The contention that better roads would benefit only the owners of the minority of trucks having the heavier axle loads is the greatest fallacy of all. The fact is that, although in number the heavier trucks are a relative minority, in transportation service these big trucks make a major contribution to the broad transportation picture. They are the ones which haul the people's goods at the lowest unit cost. They are the ones which render an indispensable service in the development of our natural resources, such as in coal and metal mining, logging, oil field work, heavy construction and excavating and the vast over-the-road movement of live stock, farm produce, milk and general freight so indispensable to our economic life.

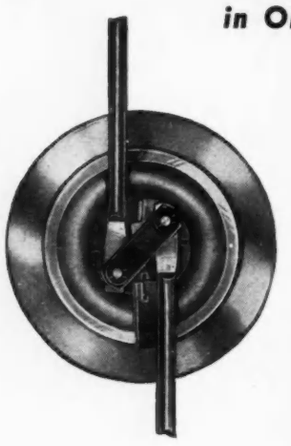
Those who operate our heavy trucks are in one of the most highly-competitive fields of industry. They stand or fall on exceedingly narrow margins of their operating ratios. Competition forces the survivors to be efficient and economical if there is to be any profit from operations, and the chief gainers from this efficiency are the people at large, whose goods they haul. So the issue is whether this vital economy of transportation cost is to be promoted and increased or discouraged.

(TURN TO PAGE 144, PLEASE)

ANNOUNCING

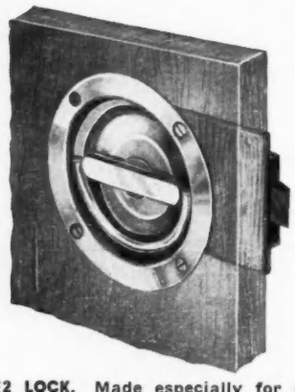
A few of the NEW HANSEN Products

—featuring NEW designs in ONE-UNIT Locks



EASIER TO APPLY—simpler in design—more adaptable—faster operation—smoother performance—added dependability—HANSEN NEW ONE-UNIT Locks have features that appeal alike to designer, builder, user.

INCLUDED are—Lock with handle, rods, mechanism in ONE unit—Lock and Flush Handle in ONE unit—Tool Box Lock and Handle in ONE unit. ALL these and other Hansen products illustrated and described in FOLDER NO. 90. SEND FOR YOUR COPY!



106-L LOCK. Handle, operating center mechanism and rods combined in ONE unit. Lock includes handle, rods and guides. Unit comes complete, ready for instant installation. The 79 series Flush Handle (79-L, 79-M, 79-S) and the 81 series (81-L, 91-M, 81-S) are available for use with this Lock.

46-H TOOL BOX LOCK. Handle integral with bushing and locking bolt. Easily applied to wood or metal. Strong, compact, light weight, it finds ready use on ALL TYPES of small doors, for commercial or industrial use. Size of Lock, 3" x 1". Weight, ¼ lb.

52 LOCK. Made especially for use with Flush Handle. Bushing is located 4" from end of Lock, for adapting Lock to Flush Handle use. Lock is also usable with T Handles, Curved and Offset Handles. Can be applied to small and medium-size doors. Lock is made of heavy-gauge steel.

REQUEST FOLDER NO. 90

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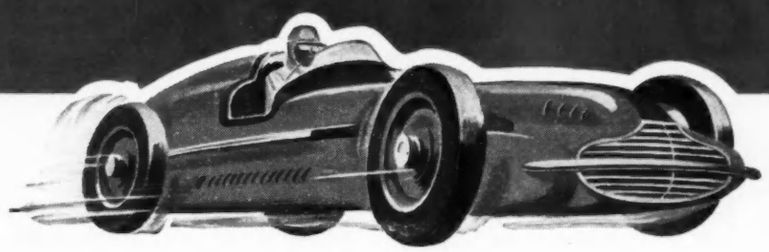
HANSEN HARDWARE for Commercial Trailers

Monmouth* Bearings again a winner at Indianapolis



THE winning car, as well as all the finishing cars, in this year's Indianapolis 500-mile classic were equipped with Monmouth Engine Bearings.

The features that make these bearings the choice of winning race car builders are equally valuable and important to passenger car, truck and bus operators.

Specify Monmouth for engine bearing replacement—assure your customers of "winner" quality on every bearing replacement job. Distributed by NAPA Jobbers, coast to coast.

Your NAPA Jobber is a Good Man to Know!

NAPA Assurance of Quality

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Monmouth
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ENGINE BEARINGS
CLUTCH PLATES AND PARTS
CHASSIS PARTS

Supplied through Clevite Service, Inc. Made by The Cleveland Graphite Bronze Co.
Units of Clevite Corporation, Cleveland, Ohio.

. . . Weight Restrictions

Continued from Page 142

The Fallacy of 40 in.

AXLE weight limitations are not the only ones affecting the gross weight of vehicles, however. Wholly without justification, thirty states restrict axle weights below 18,000 lb when they happen to be placed adjacent to companion axles, as in truck bogies and trailer tandems.

Years ago, the Bureau of Public Roads conducted some tests in which it was determined that where axles were spaced closer than 40 in. apart, the sum of their weights imposed stresses in the pavement greater than either axle would by itself. Conversely, of course, these tests also established the fact that if they were spaced 40 in. or more, the pavement suffered no more stress than from a single axle. In other words that such a bogie, loaded to 18,000 lb per axle or a total of 36,000 lb, exerted no more stress on the pavement than a single axle imposing 18,000 lb pavement loading. That's where the 40-in. figure which is so prominent in many of the state regulations, comes from.

Tires capable of sustaining 18,000-lb axle loads, however, according to Tire & Rim Assn. standards are 11.00-20 in size or larger. Such tires have an overall diameter when new, of approximately 42±½ in. and require at least 6 in. of clearance between them, making 48±½ in. the closest spacing practicable. For proper skid-chain clearance, indeed, 50 in. is the minimum, so that there is really no significance in the 40-in. figure, so far as any regulations are concerned and hence, so far as pavements are concerned, no justification whatever for any limitation on bogie or tandem loads other than individual axle weight limits.

The Bridge Formula

BUT there is another prevalent weight limitation which deals with tandem axle loading from a different standpoint. This is the Bridge Formula. Some states set limits on the maximum weight per axle imposed on the road and then add a contradictory maximum gross weight. Some prescribe axle weight limitations for the protection of the road and a formula to govern the loading of bridges. Some allow more gross weight on a tractor-semitrailer than on a six-wheeled truck with the same number of axles. Most of them restrict the weight on a two-axle bogie to less than double the weight allowed on a single axle. The confusion is illustrated on page 69.

Although functionally a bridge is an integral part of the highway, structurally it is different. The pavement on the highway is merely a wearing surface, like the carpet on the floor. The supporting structure is the earth itself and the pavement is supported under its entire lower surface. But on a bridge the pavement is a slab supported by cross-beams and girders and at spaced intervals. Between the cross-beams there is no support, so that the slab is subjected to bending stresses.

Obviously on the highway, it makes no difference how the axles are spaced, provided they are not less than 40 in. apart, for the stress in the pavement and the underlying sub-base can never exceed that of a single axle. On a bridge, however, we are concerned with the total weight imposed between supports of a span. Obviously the farther the axles are apart, the less the concentration of weight will be.

Some years ago bridge engineers commenced to worry about these weight concentrations and they devised a formula intended to limit such concentrations. This formula is: $C \times (L + 40)$, in which C is an arbitrary num-

(TURN TO PAGE 146, PLEASE)

Where on-the-nose Accuracy Counts
Truck Tire Life Depends on Accurate Inflation
The slightest error in inflation pressure can reduce fleet tire life as much as 15%—inaccurate gauges can rob you of one-out-of-six tires. And proper inflation reduces accident hazards, too.
There can be no question—you get on-the-nose accuracy when you use an Eco Tireflator. Simply set the dial to the required pressure (range 5 to 110 lbs.), and apply the chuck—tires are quickly and automatically brought to exact pressure.
Various models are available—all meet Grade A testing specifications of the American Standards Association.
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QUALITY PRODUCTS SINCE 1857
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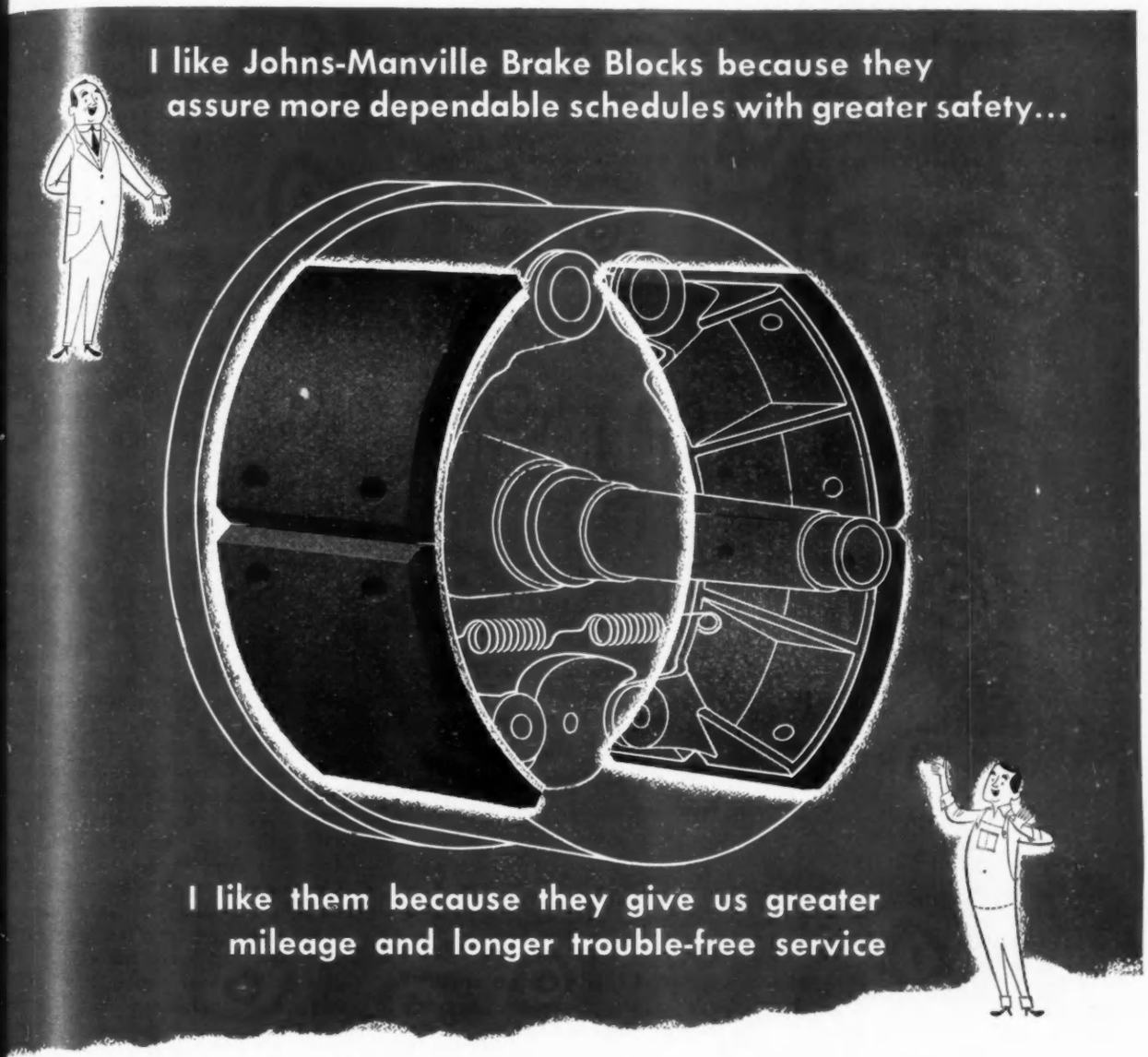
I like Johns-Manville Brake Blocks because they assure more dependable schedules with greater safety...
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Management man and maintenance man . . . both say

Johns-Manville Brake Blocks

give top performance at lowest cost per mile

To meet the widest possible range of braking conditions, Johns-Manville Brake Blocks are supplied in individual units, or combination sets of high, medium or low frictional characteristics. This flexibility permits custom engineering for every type of brake to meet every type of condition encountered in the operation of bus and truck fleets.

To bus and truck operators, this means lower brake cost per mile, smoother stops, minimum shop and out-of-service time. Most of all, it means *dependability under all driving conditions.* If you would like more information on Johns-Manville Brake Blocks, write Automotive Division, Johns-Manville, Box 60, New York 16, N. Y. In Canada, 199 Bay St., Toronto.

Johns-Manville *asbestos* FRICTION MATERIALS

. . . Weight Restrictions

Continued from Page 144

ber of pounds, based upon the class of bridge to be protected and L is the length, in feet, from the center of the first axle to the center of the last axle of the vehicle or any combination of vehicles. The constant C varies from 650 to 850, depending upon which state you are in. Two states make this little pastime more interesting by substituting different constants than the mysterious 40. Ohio uses 47½ and Wisconsin 26, with a C of 1000. (Here Mr. Horine dealt at some length with the construction of bridge formulas and cited a paper by Prof. John Worley indicating that the only critical bridges are between 30 and 100 ft long—relatively few in number.—Edit.)

From a practical standpoint, there is no need whatever to superimpose the bridge formula on thet axle weight limitation. That so many states have chosen to do so indicates again, the alarming failure of those responsible to recognize *that the bridge and the highway are essentially one.* The contention that bridges require weight limitations independent of those applying to the road itself is a clear admission that in some cases, highways have been built in which the load capacities of their incidental bridges differ from those of the roads connecting them. Thus either one or the other is either deficient or over-built, revealing a waste of taxpayers' money.

As though this dual basis of limitation were not enough, forty-three states also have a definite ceiling on gross weight, regardless of the other two bases. A single example will point out the contradictions. In Wisconsin a four-wheeled tractor and tandem axle semi is permitted 57,500 lb by axle weight; 68,000 lb by gross vehicle weight (regardless of type) and 71,000 lb by formula limitations.

Uniform Weights Not Desirable

IF ALL states had identical limitations, each manufacturer could adapt his designs in this manner and provide users with the maximum capacity possible under the law. Such uniformity is very far from existing and it is to be hoped it will not come to pass in the foreseeable future.

In the Northeastern states, where soils generally are rocky and well drained and where traffic congestion is greatest both in the closely-contiguous cities and towns and on inter-city highways, axle weight limitations are considerably more liberal, while length limitations are more restrictive.

In the wide-open regions of the far West, where save for a few large cities, population and hence traffic is sparse, extreme length of combinations is not only permitted; but encouraged for the sake of bridge structures which are often on the light side.

Thickly-settled states of rolling terrain, where a multitude of obsolete bridges stand little chance of early modernization, seek limitations on both weight concentration and length.

No one seems to know just how much necessity there is for severe restrictions in those states whose highway and bridge systems are below par; but every informed person knows how seriously both traffic congestion and cost of highway transport would be affected were the more liberal regulations in the Northeastern states to be made more restrictive.

Truck producers and operators do not ask for freedom to destroy the roads. They ask merely that they be permitted to put upon them vehicles which will insure the greatest public benefit from their operation; which will not only preserve them as physical assets, but insure the greatest long-run return from the sums expended.

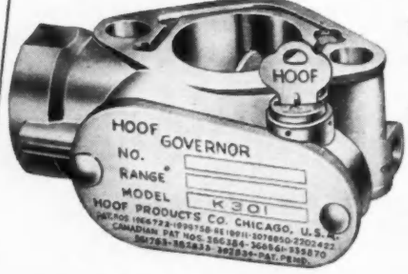
END

Please Resume Reading Page 70

"HOOF GOVERNORS
cut both maintenance and operating costs . . . with no change in running times!"

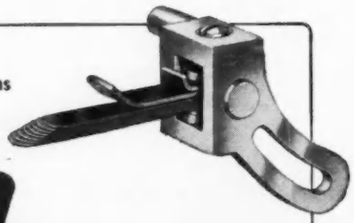
"Governed" speed doesn't necessarily mean "slow" speed. Hoof Governors simply insure that your vehicles are driven at the speed *you* select.

Whether this "most practical" speed is 30 mph or 60 mph, Hoof Governors provide round-the-clock protection: first, approved top speed cannot be exceeded, and second, excessive engine racing in intermediate gears is positively prevented.



Now that equipment *must* be conserved, Hoof protection is doubly important. Write for full facts.

A Patented, exclusive Hoof feature, this Cantilever Spring means more accurate speed control, simplified construction and longer life!



HOOF *key and seal type* GOVERNORS

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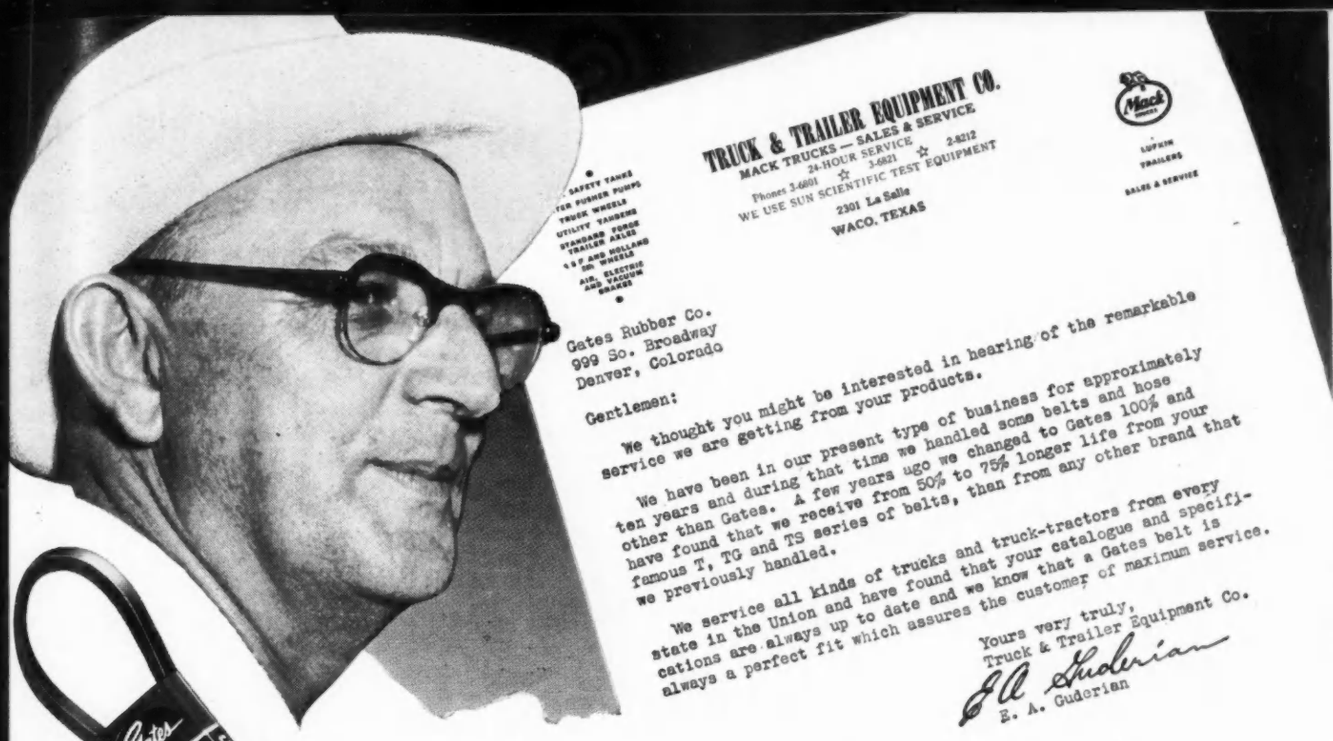

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Gentlemen:

We thought you might be interested in hearing of the remarkable service we are getting from your products.

We have been in our present type of business for approximately ten years and during that time we handled some belts and hose other than Gates. A few years ago we changed to Gates 100% and have found that we receive from 50% to 75% longer life from your famous T, TC and TS series of belts, than from any other brand that we previously handled.

We service all kinds of trucks and truck-tractors from every state in the Union and have found that your catalogue and specifications are always up to date and we know that a Gates belt is always a perfect fit which assures the customer of maximum service.

Yours very truly,
Truck & Trailer Equipment Co.
E. A. Gudorian

E. A. Gudorian

"...always a perfect fit ...last 50% to 75% longer" ..make satisfied customers

Those 3 headlines tell you *why* the Truck & Trailer Equipment Co., of Waco, Texas, uses Gates "T" Belts *exclusively* in servicing big trucks and truck tractors from all parts of the country.

Like truck maintenance men all across the country, this progressive truck service firm knows from actual experience that Gates "T" Belts — specially engineered for trucks and buses — wear from 50% to 75% and even 80% longer.

To their truck customers therefore, this means road delays due to fan belt failures are practically eliminated . . . trucks keep on schedule . . . *net operating time is kept UP* . . . revenue and profit are increased.

The longer service life of Gates "T" Belts makes money for truck operators another way — belt replacement costs are cut in half, and far more than half according to written statements from Fleet Managers, Purchasing Agents and other users from coast to coast.

It's easy to prove to yourself the cost-cutting, money-making performance of the Gates "T" Belt — simply install it on your equipment and match its record against any other belt you have ever used. There is a Gates Belt jobber near you who will supply you promptly with the Gates Belts you need. The Gates Rubber Co., Denver, U.S.A. — *World's Largest Maker of V-Belts.*

A-37

tough, multiple-ply cover developed by world's largest maker of V-Belts.

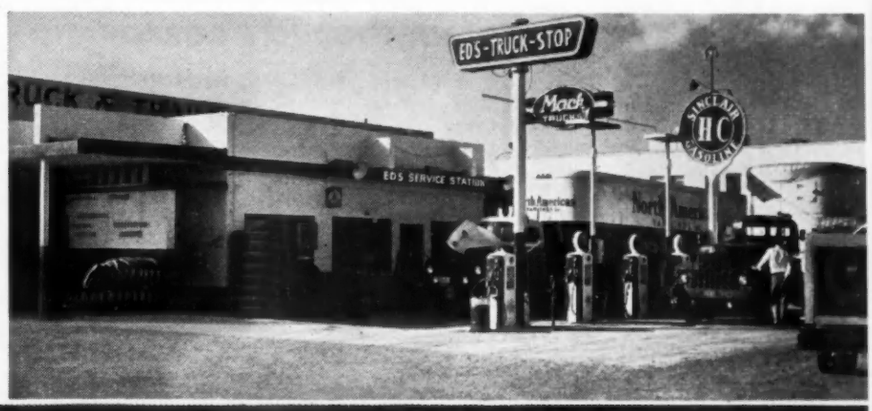
built with rayon cords—the same kind used to increase life of Truck Tires.

Gates ®
The mark of Specialized research

Look for this T*

To get 50% to 80% more service out of fan belts look for this "T" on both label and belt. The "T" is your assurance of a belt specially engineered for Trucks and Buses.

*REG. U.S. PAT. OFF.



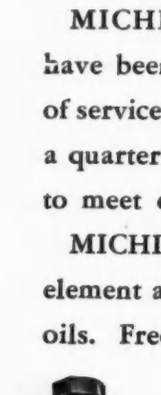
GATES TRUCK & BUS V-BELTS

Will Cut Your Operating Costs!

Whether you use gasoline or Diesel engines, the one accessory that will cut your operating expense 40%, 50%, or more is a *good* oil filter.

MICHIANA Oil Filters, the *engine engineers'* filters, have been thoroughly tested and proven in every kind of service, and on every kind of motor driven vehicle for a quarter century. MICHIANA are constantly improved to meet engine developments.

MICHIANA's scientifically treated long-fiber cotton element absorbs the grit, abrasives and sludge in motor oils. Frequent and costly oil changes are eliminated, thorough lubrication is assured, unnecessary engine wear is prevented, and repair bills cut. Fuel and oil bills are slashed because MICHIANA Filters keep engines in top, efficient operating condition for thousands and thousands of extra miles of service.



A complete range of sizes and types is available to meet your particular service.

MICHIANA PRODUCTS CORPORATION
Michigan City, Indiana

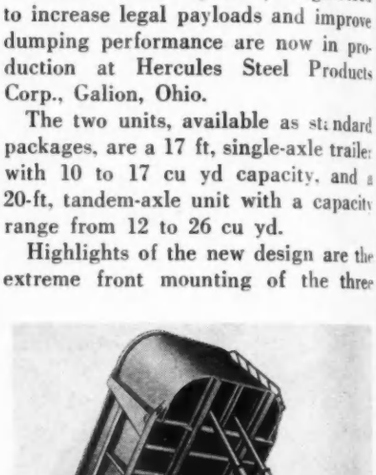
MICHIANA
OIL FILTERS

New Hercules Dump Trailers Announced

TWO new Telescopic Hoist Dump Trailer Units specially engineered to increase legal payloads and improve dumping performance are now in production at Hercules Steel Products Corp., Galion, Ohio.

The two units, available as standard packages, are a 17 ft, single-axle trailer with 10 to 17 cu yd capacity, and a 20-ft, tandem-axle unit with a capacity range from 12 to 26 cu yd.

Highlights of the new design are the extreme front mounting of the three



and four sleeve twin telescopic hoisting mechanisms and the simplified method of packing the telescopic joints, the latter resulting in reduced maintenance costs.

Benefits of the hoist front-mounting principle, to contractors and material haulers, are announced as lower hydraulic pump pressures, improved per-axle gross loadings, better over-all dumping stability, and up to 2000 lb increase in legal payloads.

Although the complete packages are available on a "ready to roll" basis, the hoists and bodies may be obtained separately for mounting on any make trailer chassis.

SLIM 'N GREASY, OUR SHOP ROUSTABOUT, SAYS THAT HIS DEFINITION OF A PERFECT WIFE IS: A BEAUTIFUL, SEX-STARVED DEAF AND DUMB MUTE WHO OWNS A LIQUOR STORE.

Consolidated's Freightways Club Ups Employee Morale

CONSOLIDATED Freightways of Portland, Oregon, has worked out a unique employees club program which has eliminated the necessity of company financial participation in employees' activities. Thirty-five per cent of the some 1200 employees of the freight line belong to the club and pay regular membership dues of one dollar a year. Other revenue for the club comes from the operation of Coca-Cola coolers and a payment of 2 per cent of the gross from two on-the-property cafeterias which are operated by the Oregon School for the Blind.

The club sponsors a golf tournament, bowling and basket ball teams, an annual picnic, dances, and other social events.

A membership card is issued to each employee who joins the club. This card entitles the employee and the employee's family to participate in the annual picnic, dances, and other mixed entertainment.

E. L. Hamm, an officer of the company, is treasurer of the club. A board of twelve directors, selected yearly from the employee club members, meets the first Thursday of each month. All matters of club policy are decided at these meetings, including the operation of the club income facets.

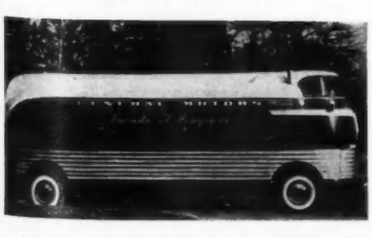
The coolers are owned and serviced by the local bottling company. The entire profit from their operation, which in a year's time amounts to a sizable figure, is turned over to the club. The coolers are set up in convenient locations in the shops, on the dock, and at the terminal. The workmen in these departments do not have scheduled morning and afternoon breaks, but can go to the coolers and refresh themselves at will.

"Aside from the club profit angle, we find that there is a definite advantage, reflected in better workmanship and fewer minor accidents, when a worker can take a break and refresh himself when he feels the need to do so," claims Mr. Hamm.

While employee activities sponsored by the Portland Freightways' Club do not cover as wide and varied a field as many company-sponsored programs, there is some activity going throughout the entire year.

"I believe," Mr. Hamm said, "that our club activities are better supported and more popular because there is no company control resulting from company financing."

GMC Futurliners



Air conditioned Futurliners, like the one pictured above, house the scientific exhibits of the General Motors Parade of Progress show now starting its nation-wide tour. The cab is equipped with a Frigidaire air conditioning system which allows the driver to control the temperature and amount of cool air entering the cab. With windows closed, hot gusts of wind, dirt, rust and exhaust fumes are prevented from entering, irritating traffic noises are held to a minimum.

CLEARANCE AND MARKER LIGHTS

Model 91 Protected . . . red or amber Fresnel lens . . . ½" sturdy steel body.

91

Model 70-C Streamlined, flat base . . . red or amber lens.

70-C

Model 92 Protected . . . red or amber Fresnel lens . . . heavy steel body.

92

DOME LIGHTS

Model 38-M, steel, grey enamel, toggle switch . . . flat Moonstone (translucent) lens.

38-M

Model 38, steel, grey enamel, toggle switch . . . convex, Holophane lens.

38

Model 39, steel, grey enamel, toggle switch . . . convex Holophane lens, special wire guard.

39

GIANT STOP LIGHTS

Model 44-BS diam. 8", depth 3", black enamel, chrome plated rim. Red or amber lens. 2" "STOP" fire-stained on 3" black band.

Model 41 heavy steel, black enamel. 11½" x 3", 2½" deep. Red glass lens, "STOP" fire-stained in black.

44-BS

41

Follow THE DIETZ LINE FOR DRIVER VEHICLE CARGO Safety!

DIRECTION SIGNALS (ALL LUCITE LENSES)

125

Model 125 Double Face Light.

120

Model 120 Single Face Light.

130

Model 130 Flush Mounting Light.

Model 111-C Self-Cancelling Switch . . . ETL tested in over 175,000 cycles of continuous operation. LIFETIME GUARANTEE—WILL NOT BURN OUT.

111-C

Every Safety Lighting need for ALL your payload units can be met in the complete DIETZ LINE! It is backed by over a century of safety lighting "know-how". State laws and ICC regulations stipulate that all commercial vehicles MUST be equipped with Lights, Signals, Reflectors, Flares, etc., in good working order. You'll more than meet all of these requirements and operate with maximum safety with DIETZ, because ALL DIETZ products are fully tested and approved, wherever required, for legal use in your State. Moreover, when you standardize on the DIETZ Line for your lighting equipment, you'll save time and lower maintenance costs as all replacements are easily and swiftly obtainable from nationwide Distributors in every locality. Follow the DIETZ Line for maximum safety and minimum expense.

R. E. DIETZ COMPANY, Syracuse 1, N. Y.

EXTENSION MIRRORS

75-RR

Model 75-RR . . . Panel Mounting, 8¼" x 4½", rubber protected rectangular head.

75-H

Model 75-H Mirror Head, rubber cushioned. 8¼" x 4¼".

Model 74-HR Mirror Head, rubber protected, circular head. 5¼" overall diam.

74-HR

REFLEX REFLECTORS

86

Model 86 Flush Mounting, Oval, Assembled. 4½" x 3¼", depth ⅝", heavy steel, gray enamel. Red or amber Stimsonite Plastic Lens.

88

Model 88 Flush Mounting, Round, Unassembled. 3¼" diam., depth ¼", non-corroding aluminum. Red or amber Stimsonite Plastic Lens.

SEALED BEAM SPOTLIGHT

Model 510-SC Universal, swivel mounting. Chrome plated, 5¾" diam. Control handle on back of light, toggle switch. Standard equipment on fire apparatus, wreckers, emergency vehicles and road maintenance equipment. Clear or red Sealed Beam bulb.

510-SC

348-ICC Safety Kit with Kit Box, 3 Flare Pots, 2 Flags and 2 Staffs, 3—15-minute Fusees and 2 Fuse Holders.

323-F Reflector Flare . . . heavy steel, patented Stimsonite Plastic Lenses, 3-way visibility for ½ mile . . . will not SKID IN WIND.

OVER A CENTURY OF Safety LIGHTING DIETZ

Pacific Intermountain Express Co., Oakland, Cal., and **Summit Fast Freight** announced 6 to 7 day through trailer service from and to points in Ohio, such as Cleveland, Akron, Youngstown, and western Pennsylvania, and western points such as Los Angeles, San Francisco, Salt Lake City and Denver.

Arrowhead Freight Lines,, Ltd., and **Asbury Transportation Co.**, Los Angeles, Cal., moved into their new terminal and offices in that city.

East Coast Freight Lines, Richmond, Va., moved into its new Baltimore, Md., terminal. The company is celebrating its 20th anniversary.

Interstate Motor Freight System, Grand Rapids, Mich., announced 1952 earnings of $2.10 per share. The announcement also noted that the company has purchased 107 new trailers in 1952, "mainly out of working capital" and plans to purchase 120 more this year.

C. A. Conklin Truck Lines, Detroit, added 30 new trailers to its fleet, bringing the total to over 300 trailers.

Associated Transport, Inc., New York City, started receiving the first of 600 new trailers now on order.

Needham's Motor Service, Inc., Philadelphia, put 10 new refrigerated trailers in service.

Gateway Transportation Co., La Crosse, Wis., opened a new St. Louis, Mo., terminal. Features include 45 doors, reinforced concrete construction, built-in sprinkler system, glass skylights and full length ventilators.

Transcon Lines, opened a new terminal in Kansas City, Mo.

Akers Motor Lines, Inc., Gastonia, N. C., opened a new terminal in Salisbury, N. C., bringing the company's total terminals and call stations to 43.

Murdoch and Hatch Motor Transport, Inc., Boston, Mass., began operation as a New England—New York common carrier.

Schreiber Trucking Co., Pittsburgh, Pa., announced the opening of a new terminal at Kenilworth, N. J.

Red Star Express Lines, Auburn, N. J., began construction of a $700,000 terminal and office in North Bergen, N. J. The company is also planning a $150,000 termial in Rochester, N. Y.

Associated Transport, Inc., New York City, has set up special meetings for drivers and other company personnel to acquaint them with Associated's new fleet of International Harvester tractors.

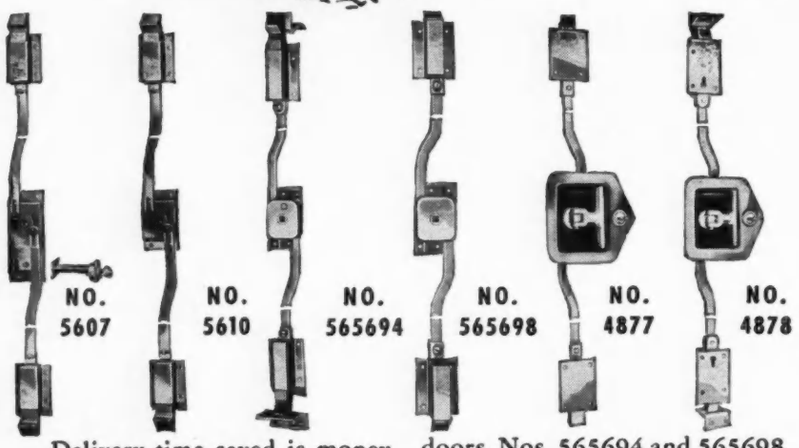
Consolidated Freightways, Inc., Portland, Ore., has awarded 12 college scholarships of $500 each in its second annual scholarship competition.

Suburban Motor Freight, Inc., Columbus, Ohio, recently moved its terminal from Parkersburg, W. Va., to Belpre, Ohio, to improve its north-central W. Va. and its central Ohio service.

Dohrn Transfer Co. recently moved into its new $300,000 Rock Island, Ill., terminal. Fifteen trailers can be handled on each side of the 200 ft freight dock.

Consolidated Freightways, Inc., Portland, Ore., has reported a consolidated net income for 1952 of $978,686 as compared to $711,314 in 1951.

Associated Transport, Inc., New York City, reported a consolidated net income for 1952 of $509,223 as compared with $1,128,932 in 1951. Said the report, ". . . the most important single reason . . . for inadequate earnings last year was the condition of the company's fleet of revenue equipment, and the resulting impact of high maintenance costs which increased 27.5 per cent over 1951."



Delivery time saved is money saved and the convenient ease of operation of Eberhard "Slamlocks" with their cargo protecting facility is responsible for their strong acceptance by body builders.

Nos. 5607 and 5610 for heavy doors, Nos. 565694 and 565698 for medium doors, Nos. 4877 and 4878 "Recesso" locks (with recessed folding handles) for compartment doors of tank and utility bodies.

Drop us a line. We'll be pleased to give you complete information on any or all of these items.

No. 4879—Paddle Handle Recessed Door Locks with slam latching action.

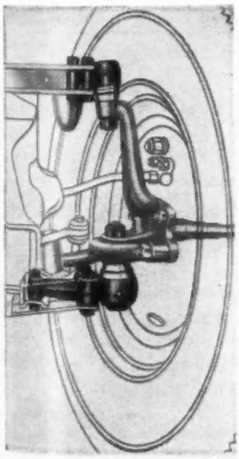
EBERHARD *Long Run*
TRUCK BODY FITTINGS
E
EBERHARD MANUFACTURING CO.
Division of the Eastern Malleable Iron Co. EVARTS AVENUE CLEVELAND, OHIO

FLOYD CLYMER REPORTS ON

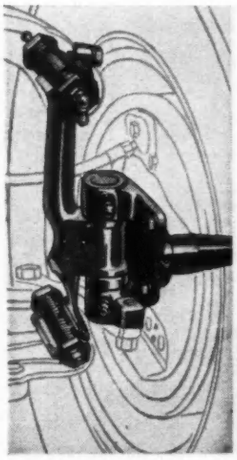
Thompson Front Suspension Ball Joints

"The car steers almost as easily while in motion as if it were equipped with power steering and easier at all speeds than most cars of comparable weight".

. . . from Mr. Clymer's Popular Mechanics report on the 1952 Lincoln, with whose engineers Thompson Steering experts worked in the development of its new front suspension ball joints.



Thompson Front Suspension Ball Joint



Standard King Pin Type Suspension

Lubrication points are reduced from approximately five to two fittings per side.

Six major automotive problems solved

- Reducing turning resistance for *much* easier steering.
- Creating new space for wider modern engine design.
- Cutting the manufacturers assembly line time.
- Eliminating front end suspension bind.
- Reducing lubrication points from 12 to 4.
- Increasing service life *many times over.*

. . . Showing what Thompson Engineers can do when you put them on your Team!

If you have a steering problem you'd like to talk about, write, phone or wire Thompson Products, Inc., Detroit Division, 7881 Conant Ave., Detroit 11, Michigan.

You can count on

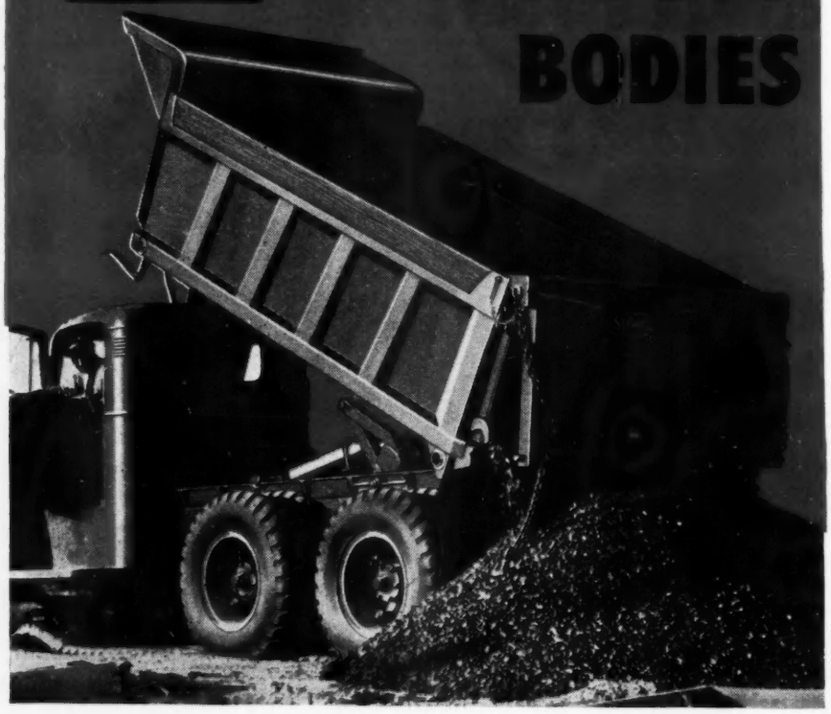
Thompson Products

MICHIGAN PLANT

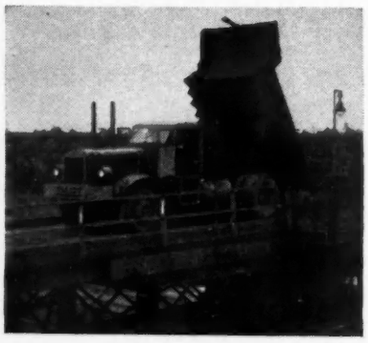
DETROIT • FRUITPORT • PORTLAND

St. Paul HYDRAULIC

HEAVY-DUTY BODIES



Give you BIG YARDAGE PRODUCTION at lowest net cost per payload hour



Extra capacity for rock and ore hauling!

New St.Paul rock-type and scoop end mucker style bodies give you extra payload capacity, plus fast clean-out with famous St.Paul Hi-Dumper hoists (up to 75° dump angle). St.Paul line also includes special all-steel bodies for practically every purpose.

To withstand the *heavier-loads and jolting shocks* of heavy-duty hauling, it takes a lot more than just a "few pieces of iron welded into a box". You need an extra-rugged dump body that is "*stress-engineered*" for extra payload hours.

That's why it will pay you to compare St.Paul's new *bonus values* . . . unitized steel subframe . . . massive box girder side braces . . . double-rolled top flanges . . . rigid boxed corner posts . . . plus full-length rub-rails! And note especially the "*business end*" of the new St.Paul contractors' body, with its husky 3-way reinforced box channel tail gate, designed for extra body strength and rigidity.

Call your St.Paul Distributor for recommendations to fit your needs. St.Paul Hydraulic Hoist, Customer Service Dept., 36131 Main St., Wayne, Mich.

S-BC-2

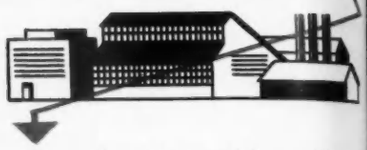
OUR 41st YEAR

St. Paul DUMP BODIES

Send for your FREE copy of the new St.Paul heavy-duty catalog — just off the press!

Perfect "team-mates" for new St.Paul work-rated hoists

FACTORY FLASHES



Magnaflux Corp., Chicago, Ill., has opened a new main plant at 7300 Lawrence Ave., in that city.

Clark Equipment Co., Buchanan, Mich., has acquired all the capital stock of The **Ross Carrier Co.**, Benton Harbor, Mich. **Michigan Power Shovel Co.**, a subsidiary of Ross, is included.

R. M. Hollingshead Corp., Camden, N. J., will build a $750,000 plant in Sunnyvale, Cal.

ACF-Brill Motors Co., Philadelphia, has received a U. S. Army Ordnance Corps order for $4.5 million for the manufacture of 105 mm gun recoil mechanisms and ammunition.

George Mfg. Co., Philadelphia, has appointed **George Frey Associates**, Philadelphia, as Middle Atlantic area district representatives.

S. K. Wellman Co., has completed its move into the company's new Bedford, Ohio, plant.

Ohio Piston Co., Cleveland, Ohio, has appointed three new factory warehouses and representatives: **Neal Greenfield Sales Co.**, Forth Worth and Dallas, Texas, will handle Texas, Oklahoma, Arkansas and Louisiana; **Morse Sales Co.**, San Francisco, Cal., will handle that state; and Oregon, Washington, Idaho and Montana will be served from **Maremont Warehouse**, Portland, Ore.

Black and Decker Mfg. Co., Towson, Md., has broken ground in construction of a $2,000,000 addition to its Hampstead, Md., branch plant.

General Tire and Rubber Co. is planning to dispose of its entire stock holdings in **Mansfield Tire and Rubber Co.**

Bonney Forge and Tool Works, Allentown, Pa., presented a complete set of auto mechanics tools to a Hillsboro, Ohio, mechanic who had sold his to pay medical bills for his daughter.

Walker Mfg. Co., Racine, Wis., has just completed a series of two-week sales and product training courses for members of the company's wholesale division.

Ford Motor Co. has in the works plans for a 1½ million sq ft truck and passenger car assembly plant near Mahwah, N. J. Cars and trucks will be handled on separate assembly systems.

White Motor Co. is offering its 100 series regular basic truck engine with special modifications for industrial use. A larger series of industrial engines is planned.

a PLUG for SAFETY

Fuel tanks rank in safety importance with fifth wheels, brakes, and lighting. Yet, the majority of operators who buy fuel tanks purchase them from the standpoint of additional capacity instead of safety. When you buy a tank, buy safety as well as additional fuel capacity. It costs no more.

In accordance with Underwriters and ICC specifications, Prior safety tanks are equipped with a fusible plug which has a melting point of 165 to 170 degrees to relieve the pressure if the tank is exposed to fire. This fusible plug is located in the body of the tank separate from any removable part and cannot be lost.

In buying safety tanks insist on a positive safety fuse plug separate from any removable part of the tank. This is your guarantee of safety. Write for free catalog.

Prior

SAFETY TANKS

PRIOR PRODUCTS, INC.

BOX 7608 • DALLAS, TEXAS • BOX 349 • MIDDLETOWN, OHIO

FLEETMAN'S LIBRARY

Thermostatically controlled fan drive said to produce a 10 per cent fuel saving and increased engine efficiency is described in a new bulletin available from Schwitzer-Cummins Co., 1125 Massachusetts Ave., Indianapolis 7, Ind.

Test specifications for Delco-Remy distributors, generators, cranking motors, regulators and magnetic or solenoid switches are given in Booklet No. DR-334S, "Test Specifications," available from United Motors Service, 3044 West Grand Blvd., Detroit 2, Mich., at 25¢ each. Quantities available at a discount.

Blower-type, dry-ice bunkers made by Foster-Built Bunkers, Inc., are described, case histories given, specifications listed and typical installations shown in a new folder. Write the company for a copy at 757 West Polk St., Chicago 7, Ill.

Nine inch, precision lathes made by South Bend Lathe Works, 425 East Madison St., South Bend 22, Ind., are described in a new catalog. Write for a copy of Catalog No. 5304.

Rosin core solder said to have greater spread, have faster oxide penetration, be non-corrosive and non-toxic, and have a stable flux is covered in a new folder available from Federated Metals Division, American Smelting and Refining Co., 120 Broadway, New York City.

Truck, bus and automobile fleet operators will be interested in a new book "Automotive Transportation in Industry," by Samuel J. Lee. From a standpoint of obtaining efficient operation with least cost, it discusses leasing, company ownership, fleet management, cost accounting, maintenance, advertising, safety, vehicle selection and replacement and motor fuels. It can be obtained from Lloyd R. Wolfe, Publisher, 111 West Washington St., Chicago 2, Ill., at $7.50 per copy.

Hydraulic jacks, rams and pullers made by Templeton, Kenly and Co. are described in a new catalog and a new bulletin available from the company. Write for copies of Catalog No. 53 and Bulletin No. 53 to Templeton, Kenly and Co., Gardner Road, Broadview, Ill.

Stud drivers and extractors are illustrated and described in a new bulletin, No. 653, available from Heli-Coil Corp., 1363 Shelter Rock Lane, Danbury, Conn.

Dump trailer units with front mounted, telescopic hoists now in production at Hercules Steel Products Corp., Galion, Ohio, are described in a leaflet you can get by writing the company.

"Road Supervision of Drivers" is the title of a letter-size, 26-page booklet just published by ATA's Council of Safety Supervisors. The manual covers basic principles of three general types of on-the-road driver supervision—road patrol, check stations and mechanical recorders. A special section deals with unit identification. Copies are available at 50¢ each from the Department of Safety, American Trucking Assns., Inc., 1424 Sixteenth St., N.W., Washington 6, D. C.

Truck equipment directory for GMC trucks is available from The Verbiest Publishing Co., 5435 West Fort St., Detroit 9, Mich., at $1.50 a copy.

THE

BIEDERMAN

TRUCK

An All-Star Truck
Constructed of All-Star Units
Doing an All-Star Job Since 1920

DEALERS: Compare the Biederman National Standard Model with any truck on the market and you will agree that it is an All-Star team in itself.

Only the most sturdily constructed units of America's leading manufacturers are built into it.

Biederman Trucks win by performance. Inquiries regarding dealerships solicited.

WRITE, WIRE or PHONE

BIEDERMAN MOTORS CORPORATION

CINCINNATI 14, OHIO

A Bumper Jack for Trucks?

Yes... get 'em Up quickly easily safely with Saf-Lift

lifts any car or light truck . . . the handiest auxiliary jack you've ever had around your shop . . . a trusty jack to carry right on the vehicle . . . the lowest-priced SERVICE JACK you can buy . . . yet does many lifting jobs quicker, easier than the "big boys"

Need a handy jack for many lifting jobs that come up so often around your shop? Let's say you want to change a tire in a hurry to get that truck on the road on schedule. You don't want to tie up expensive hydraulic lifting equipment on routine work. Reach for the Saf-Lift! You'll welcome the ease of operation, two-legged safety and downright simplicity of this practical jack. Saf-Lift will save you man-hours and release bigger, more expensive, equipment for more important work.

AUSCO HI-RANGE Hydraulic Axle Jacks... Don't waste time and labor. Use a jack that gets the load up high enough without dangerous gymnastics with wheel blocks. Hi-Range Jacks are a regular part of the Ausco line. Always ready to deliver. Available in 3, 5, 8 & 12-ton models. Send for **FREE AUSCO Catalog,** a complete showing of mechanical and hydraulic jacks for every fleet and heavy-duty use . . . capacities up to 20 tons. Write:

AUTO SPECIALTIES MFG. CO.
Dept. C.C. 7, St. Joseph, Mich.

AUSCO Jacks

B182

Available in Standard Model 1020 and Heavy-Duty Type 1030

INTRODUCING . . .

. . . **Chester W. Ort,** as western division assistant manager, and **E. S. Morgan** and **D. E. Kennedy,** as district managers in Portland, Ore., and Seattle, Wash., respectively, United States Rubber Co., New York City.

THE 'THREE KNOWS' OF NEAPCO

AVAILABLE

You know you can get Neapco when you want it. All three lines—Universal Joints, Chassis Parts, P.T.O. Joints—are strategically warehoused for your Neapco Jobber. He has a complete stock at his fingertips.

GUARANTEE

You know Neapco's famous unconditional guarantee. It's back of each line. You're sure of every part in every Neapco Orange box. You can always sell with confidence.

CORRECT FIT

You know Neapco fits correctly . . . saves time at installation. Correct design, fine materials, accurate manufacturing account for it. Add them up, and you get superior quality at competitive prices.

These are the three things a mechanic wants for fast satisfactory servicing. You get them all with Neapco . . . so ask for Neapco, always.

Universal Joints...P.T.O. Joints...Chassis Parts

NEAPCO PRODUCTS INC • POTTSTOWN, PA., U.S.A.

. . . **John W. Watts,** as southern states public relations field representative, American Trucking Assns., Inc., Washington, D. C.

. . . **Sam C. Mitchell,** as central zone truck manager, Dodge Division, Chrysler Corp., Detroit.

. . . **Herbert P. Buetow,** president, Minnesota Mining and Mfg. Co., St. Paul, Minn.

. . . **Armand A. Probeck,** as vice president, Snap-Tite, Inc., Union City, Pa.

. . . **W. A. Thomas,** as general sales manager; **Norman Pfund,** as trailer division sales manager, and **R. K. Morgan,** as "Unitsteel" truck body division sales manager, Gramm Trailer Corp., Lima, Ohio.

. . . **Horace Y. Barnes,** director of sales, Mather Spring Co., Toledo, Ohio.

. . . **Edwin V. Murphy, Harry E. Collins** and **Harold U. McGee,** as district managers in St. Louis, Mo., Minneapolis, Minn., and Oklahoma City, Okla., respectively, and **Wilburn B. Hooper** and **J. C. Barrows,** as assistant district managers in San Antonio, Texas, and Atlanta, Ga., respectively, United States Rubber Co., New York City.

. . . **A. E. Brehm,** service manager, Twin Coach Co., Kent, Ohio.

. . . **George M. Wilkins,** Dallas, Texas district manager, and **V. H. Knowles,** Los Angeles, Cal., district manager, as vice presidents, The Autocar Sales and Service Co., Ardmore, Pa.

. . . **Harry Eyler,** left, vice president, sales, and **James J. Black,** right, vice president, engineering, Trailmobile, Inc., Cincinnati, Ohio.

(TURN TO PAGE 160, PLEASE)

"For Truck Body Value My Choice is Fruehauf"

"BECAUSE THERE'S AN UNLIMITED CHOICE—over 500 body options—including wheelhousing and straight-frame models, in all popular lengths, with every type of door style, size and location."

"BECAUSE DELIVERY IS FAST—all units are pre-fabricated, and "Unit-Built"—ready for instant mounting and painting by your nearby Fruehauf Branch at no extra cost."

"BECAUSE SERVICE IS CONVENIENT—at any of Fruehauf's 80 Factory Branches, each equipped with a complete stock of parts and men trained to give quick service."

"BECAUSE THE QUALITY IS THE FINEST—and so is the durability—with Fruehauf's hi-tensile steel frames and bodies, engineered by experienced transportation specialists, and backed up by the world's largest, most dependable manufacturer of van-type truck bodies."

SEE YOUR LOCAL TRUCK DEALER or Fruehauf Branch representative for other details on Fruehauf's complete line of low-priced truck bodies. To design your own, ask for the free cardboard Model Demonstrator.

Truck Body Division
FRUEHAUF TRAILER COMPANY
Detroit 32, Michigan

FRUEHAUF
"UNIT-BUILT"
Truck Bodies

Introducing...

Continued from Page 158

... **Robert G. Morgan** and **Robert L. Williams,** as district managers in Moline, Ill., and St. Thomas, Ontario, Timken Roller Bearing Co., Canton, Ohio.

. . . **John S. Snell,** as coach representative, eastern territory, GMC Truck and Coach Division, General Motors Corp., Pontiac, Mich.

. . . **George L. Beard** and **Frederick E. Baxter,** as regional office managers in Dallas, Texas, and Portland, Ore., respectively, Dodge Division, Chrysler Corp., Detroit.

... **R. D. O'Brien,** vice president, sales, Kenworth Motor Truck Corp., Seattle, Wash.

. . . **William F. Wittingham,** as office manager, California Cartage Co., Los Angeles, Cal.

LINTERN STEP TANKS

Located right under the cab door, this new Lintern Step Tank transfers 75% of its weight and contents to the front axle. Depending upon tank capacity, this arrangement allows increased payload of 850 pounds or more.

This new lightweight, crash-resistant tank is safety-engineered . . . designed for use on all heavy tractors and many models of light trucks. Formed steel supports are integrally welded to the tank and suspend it from the tractor frame . . . secure from road shock, metal fatigue and torsion.

Lintern Step Tanks are supplied in 40, 50, 60 and 70 gallon capacities for gasoline or diesel fuel. Dual installation capacity is from 80 gallons to 140 gallons.

Like all Lintern products, this new step tank is subject to the rigid periodic inspection of Underwriter's Laboratories, Inc. The new model also meets manufacturing and installation specifications of the Bureau of Motor Carriers, Interstate Commerce Commission.

THE LINTERN CORPORATION
ROUTE 20, EAST • PAINESVILLE, OHIO

. . . **S. A. Moore,** as Oakland, Cal., district manager, and **James L. Widaman** and **Eugene T. Westberg,** as branch managers in Pocatello, Idaho, and Ely, Nev., respectively, Pacific Intermountain Express, Inc., Oakland, Cal.

... **Harvey V. Eastling,** left, assistant general manager, Pacific Division, and **Donald E. Thal,** right, sales manager, San Francisco, Cal., plant, Link-Belt Co., Chicago.

. . . **R. C. Wietersen,** Buda Co., Harvey, Ill., director of purchases, as president, Internal Combustion Engine Institute, Chicago.

. . . **N. George Belury,** as vice president, American Brake Shoe Co., New York City.

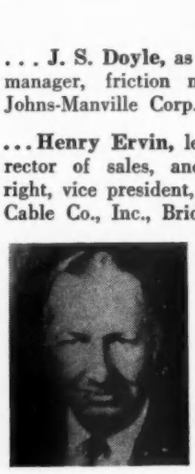
... **Lee Calvin Hopper,** advertising manager, Elwell-Parker Electric Co., Cleveland, Ohio.

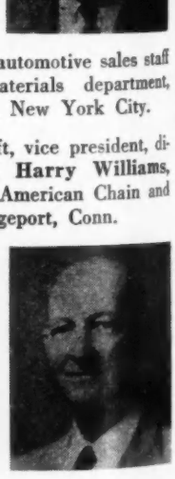
. . .**W. P. Davis,** vice president, as southern division (southern, middle Atlantic and Tennessee Valley regions) administrative head, and **D. E. Wholley,** vice president, as northern division (northern and western regions) administrative head, Associated Transport, Inc., New York City.

... **L. B. O'Loughlin,** sales manager, Spark Plug Division, Electric Auto-Lite Co., Toledo, Ohio.

. . . **J. S. Doyle,** as automotive sales staff manager, friction materials department, Johns-Manville Corp., New York City.

... **Henry Ervin,** left, vice president, director of sales, and **Harry Williams,** right, vice president, American Chain and Cable Co., Inc., Bridgeport, Conn.





TAKE DELIVERY NOW... AND SAVE MONEY!

GET 1-GALLON BONUS IN EVERY 4 CASES!

GET 2-GALLON BONUS IN EACH 54-GALLON DRUM!

(Pay for only 52—get 2 gallons "No Charge")

1. Take prompt delivery! The more "TREK" anti-freeze you order for early delivery, the more bonus gallons you get — the more money you save on your anti-freeze purchases.

2. Price Protection. If the price of "TREK" anti-freeze should be reduced between February 2, 1953, and December 31, 1953, the reduced price will apply to *all* deliveries made during that period.

3. Special Payment Terms. Your supplier has been authorized to extend payment dates, if warranted, well into the anti-freeze season.

Bonus Offer applies only to deliveries made by July 31, 1953.

TOPS IN LOW-COST PROTECTION!

Trek

BRAND

ANTI-FREEZE

is made of concentrated methanol with special inhibitors to prevent rust and corrosion . . . no offensive odor . . . more satisfactory service . . . economical. It's *tops* in low cost protection for cars, trucks and buses.

NATIONAL CARBON COMPANY

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The term "TREK" is a registered trade-mark of Union Carbide and Carbon Corporation

July Roundup

Continued from Page 62

offer special assistance on public relations problems of the industry. Funds contributed will be expended on projects proposed by the donors but such projects are subject to approval by ATA's Director of Public Relations mainly to assure coordination, prevent overlapping of projects.

1953 Domestic Truck Factory Sales by G.V.W.*

	5,000 lb. and less	5,001-10,000	10,001-14,000	14,001-16,000	16,001-19,500	19,501-26,000	Over 26,000	Total
January	47,234	19,101	3,669	12,622	3,344	8,271	3,638	97,879
February	40,616	16,600	3,087	11,068	3,409	7,621	3,811	86,212
March	55,910	22,798	5,588	19,354	4,776	9,067	4,550	122,043
April	51,743	23,352	5,078	17,700	4,287	8,200	4,461	114,821
Total—Four Months—1953	195,503	81,851	17,422	60,744	15,816	33,159	16,460	420,955
Total—Four Months—1952	138,141	67,665	19,708	69,544	15,956	35,114	17,246	361,374

* Automobile Manufacturers Association.

PMTA Suit

Pre-trial depositions in Pennsylvania Motor Truck Assn's damage suit against 30 northeastern railroads and their public relations agency, Carl Byoir and Associates, Inc., concluded last month for the summer. They will be resumed in the fall.

Highlight of last month's depositions was testimony by a former Byoir secretary disclosing the extent of Byoir's control over New Jersey anti-truck groups. And readers of *Fortune* magazine found the case reviewed in the June issue under the heading, "The Railroad-Trucker Brawl."

1953 Truck Trailer Shipments

	April	Four Months
Vans		
Insulated and Refrigerated		
Steel	69	291
Aluminum	264	1,131
Furniture		
Steel	168	699
Aluminum	14	
All other closed-top vans		
Steel	1,069	3,625
Aluminum	895	3,917
Open-top		
Steel	181	639
Aluminum	243	794
Total—Vans	2,903	11,096
Tanks		
Petroleum	409	1,301
Food	37	127
L.P.G.	10	42
All other	39	140
Total—Tanks	495	1,610
Pole, Pipe & Logging		
Single Axle	47	232
Tandem Axle	145	360
Total	192	605
Platforms		
Racks, livestock and stake	646	2,703
Grain bodies	74	404
Flats, all types	928	3,441
Total—Platforms	1,648	6,548
Low-bed haulers	474	1,399
Dump trailers	149	378
All other trailers	1,542	2,466
Total—Complete Trailers	7,403	24,135
Converter dollies	62	873
Chassis only	334	1,184
Total—Trailers and Chassis	7,799	26,192

Transportation Meetings

In New York last month, Ethyl Corp. launched a new series of transportation conferences. Their aim; to bring fleetmen, petroleum and equipment suppliers together for a briefing on past, present and possible future developments in automotive transportation, and to promote a better understanding by each group of the others' problems.

Meetings were held in New York, San Francisco and Los Angeles in June, and in Dallas early this month. Final meeting in the series will be held in Chicago, September 9-10.

(TURN TO PAGE 198, PLEASE)

Make Sure it's a Lamson

Just think of the responsibility you take, mister, when you use a bolt on a customer's car. His safety, and that of his wife and kids, may depend upon that bolt holding up.

Or, at the very least, the goodwill of a customer is at stake. And that's mighty important, too.

Holding jobs such as this call for Lamson & Sessions "1035" Cap Screws—the double heat-treated high-tensile Cap Screws that are standard original equipment on most cars.

Lamson Cap Screws are your guarantee that threads won't strip, that shanks are straight and that the finished job will reflect the high calibre of your workmanship.

Always ask your jobber for Lamson Fasteners—and be *sure*.

Lamson & Sessions

The LAMSON & SESSIONS Co.

1971 West 85th Street • Cleveland, Ohio

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ONE OF THE WORLD'S LARGEST MANUFACTURERS OF AUTOMOTIVE FASTENERS